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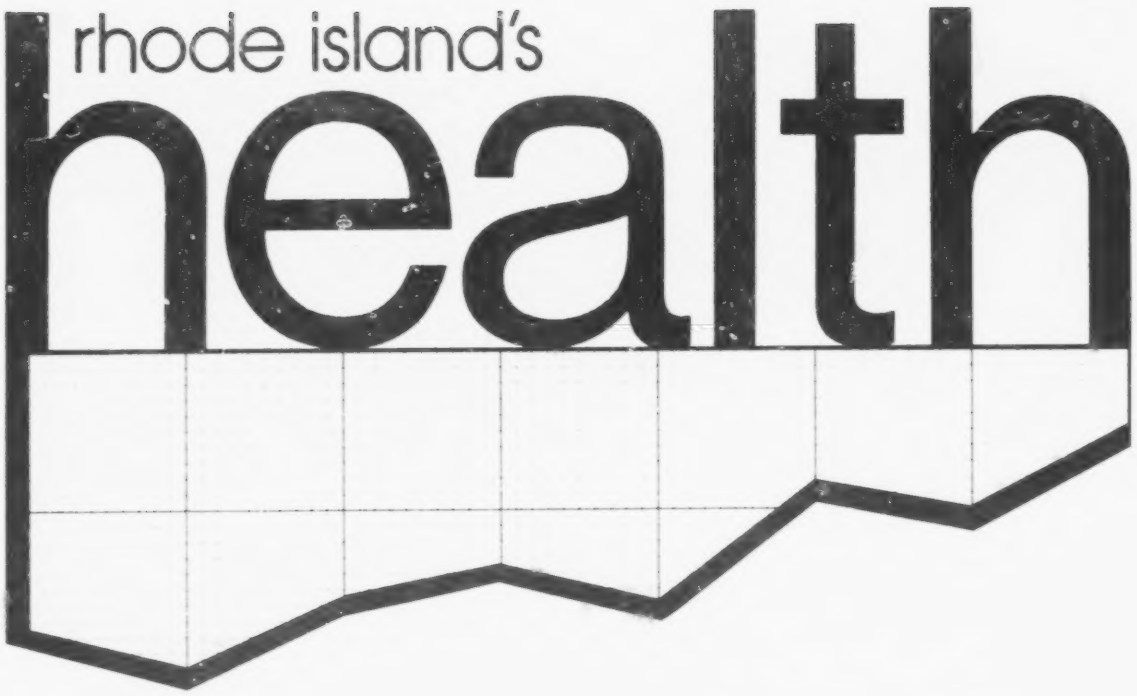
rhode island's health



Rhode Island Department of Health

Office of Data Evaluation

Rhode Island's Health

Office of Data Evaluation
Health Planning and Resource Development
Rhode Island Department of Health

March, 1984

To

The Honorable J. Joseph Garrahy, Governor

and

Members of the General Assembly

At this time I respectfully submit to you this latest report on the health of the people of the State. This report on Rhode Island's Health is the seventh report published under this title from the statewide comprehensive health database. Over the years this database has grown to become an invaluable health policy tool. It provides the capacity to identify strengths and weaknesses in the health status of Rhode Islanders as well as the health care resources available to serve them. The database provides the means to rank health priorities and to track progress in promoting health and improving access to affordable, appropriate health care.

It must be recognized in reviewing the pages to follow that the information generated by the statewide health database results from the cooperative efforts of numerous public, private, and non-profit organizations led by the State Center for Health Statistics of the Rhode Island Department of Health. Continued commitment and support are needed to maintain and further enhance the current database as this decade unfolds. Complex health policy issues will continue to receive increasing public attention, and the need for timely accurate information will increase as well.

We can be proud that Rhode Island has distinguished itself as a leader in statewide health planning and innovative legislation in public health and safety. These strengths rest largely on the sound foundation provided by our unique data capabilities.

The Department of Health expresses appreciation to the many organizations which contribute to the statewide database, and more specifically, to those individuals and institutions who provided the topical information that appears in this report.

Joseph E. Cannon

Joseph E. Cannon, M.D., M.P.H.
Director of Health

Acknowledgements

This edition of Rhode Island's Health is the result of the combined talent and dedicated effort of many individuals at the Rhode Island Department of Health. Thanks are extended to John Tierney and Dr. William Waters for their support throughout the production process; to Dr. William Hollinshead of the Division of Family Health and Dr. Jason Weisfeld of the Division of Disease Control for their review of the sections touching on their areas of expertise; and to Wayne Aldrich and his staff for another fine printing job.

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Finally, the staff of the Office of Data Evaluation should be recognized for their substantial effort in the preparation and presentation of the text and data appearing on the pages to follow: to Lisa Andrews for preparing the health costs and preventive health sections and for assembling and editing the final document; to Donald Perry for his work on the document outline and for preparing the demographics section; to John Montecalvo for his major role in producing the computer-generated graphics and for organizing the word processing tasks; and to Eleanor Monti, whose word processing skills gave rise to the narrative and data tables which follow.

Jay S. Buechner

Jay S. Buechner, Ph.D.
Chief
Office of Data Evaluation

Introduction

Rhode Island's Health is the seventh report on the health of the people of Rhode Island. As in previous editions this document provides an overview of key trends in health and focuses on selected topics of statewide public policy significance.

This report is organized into five sections: health status, demographics, health costs, health service utilization, and preventive health. The presentation is designed to emphasize trends over time and comparison with the nation as a whole.

Information presented here is based on several statewide databases developed and managed directly by the Department of Health's Office of Data Evaluation or in conjunction with Rhode Island Health Services Research, Inc. (SEARCH), the statewide health data consortium. Information has also been compiled from data produced by other public, nonprofit, and private organizations on both the state and national levels.

Rhode Island's Health is the latest contribution to the series which collectively provides legislators and other concerned citizens with a representative sample of the kinds of health information available. The series serves as a tool to clarify complex health issues and to develop courses of action to meet the many current and future challenges of public health.

Rhode Island's Health

Highlights

- Injuries were the fourth leading cause of death in Rhode Island for the period 1979 to 1981, after heart disease, cancer, and stroke. More than one quarter (27.5%) of injury-related deaths were traffic fatalities.

- In terms of years of life lost before age 65, injury-related deaths ranked first among causes. On average there are 24.8 years of life lost per death from injury compared to 1.6 for heart disease, 3.8 for cancer, and 1.2 for stroke.

- Newborn infants weighing less than 5 pounds 8 ounces are considered low birthweight; the smaller the newborn the lower the chances for healthy survival. During the period 1977 to 1979 Rhode Island's low birthweight rate, 67 births per 1,000 live births, ranked favorably below the national average of 70, but unfavorably above the regional New England average of 64.

- The newborn death rate in Rhode Island equalled the national rate of 8.4 deaths per 1000 live births in 1980; the state's infant death rate was below the U.S. average, 10.9 compared to 12.5 nationally.

- During 1980, for the first time, Rhode Islanders spent over one billion dollars on health. Hospital services continued to account for the greatest share of total health expenditures in 1980 both in Rhode Island (43.6%) and the nation (40.3%).

- Rhode Island's per capita health expenditure, $1,115.91 in 1980, continues to be higher than that of the nation, $1,074.67. The difference between the two has decreased during the past five years as the national average annual growth rate on a per capita basis (12.3%) continues to exceed that of Rhode Island (10.9%).

- In 1981 there was wide variation in per capita hospital costs among Rhode Island's thirty-nine cities and towns. Per capita hospital costs ranged from $186.05 per capita in Little Compton to $382.59 per capita in Providence. The statewide average was $308.38.

- There was also wide variation in the use of hospitals by residents of the state's thirty-nine cities and towns; hospital day use rates ranged from 644 days per thousand population in Little Compton to 1,394 days per thousand in Providence. The statewide average was 1,090 days per thousand.

- A significant proportion of Rhode Islanders continue to smoke cigarettes despite evidence of its dangers. Based on a 1980 statewide survey 38 percent of men smoke cigarettes, about equal the proportion found nationally. One-third (33.3%) of Rhode Island women smoke cigarettes; the proportion found nationally is 29.4 percent.

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Section I - Health Status

The Burden of Injuries in Rhode Island

I-1. Deaths and Years of Life Lost from Injuries

Injuries are a leading cause of death in Rhode Island. During the three-year period 1979 to 1981, injuries ranked fourth after the three leading killers, heart disease, cancer, and stroke. Injury-related deaths include those due to such differing causes as traffic fatalities, poisonings, suffocations, falls, fires, and drownings, as well as homicides and suicides. Historically, considerable public health efforts have been directed toward specific types of injuries such as traffic fatalities, poisonings, and suicides; more recently a broader perspective has been adopted to consider all injuries together. The benefit of so doing lies in the potential for improved injury prevention.

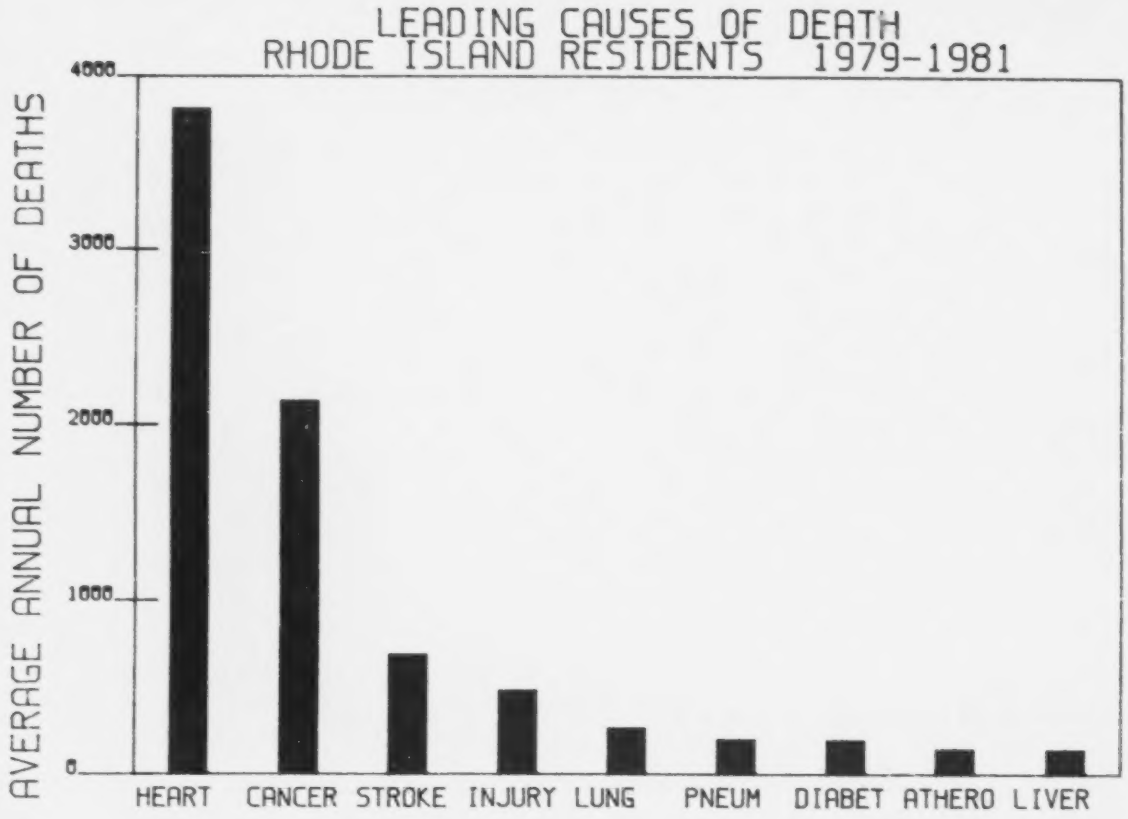
Deaths due to injuries represent a greater proportion of total deaths in Rhode Island than many other causes traditionally perceived as public health priorities. Injury-related deaths constitute 5.2 percent of all fatalities; deaths from injuries exceed those from such causes as diabetes, cirrhosis of the liver, chronic lung disease, and atherosclerosis (hardening of the arteries).

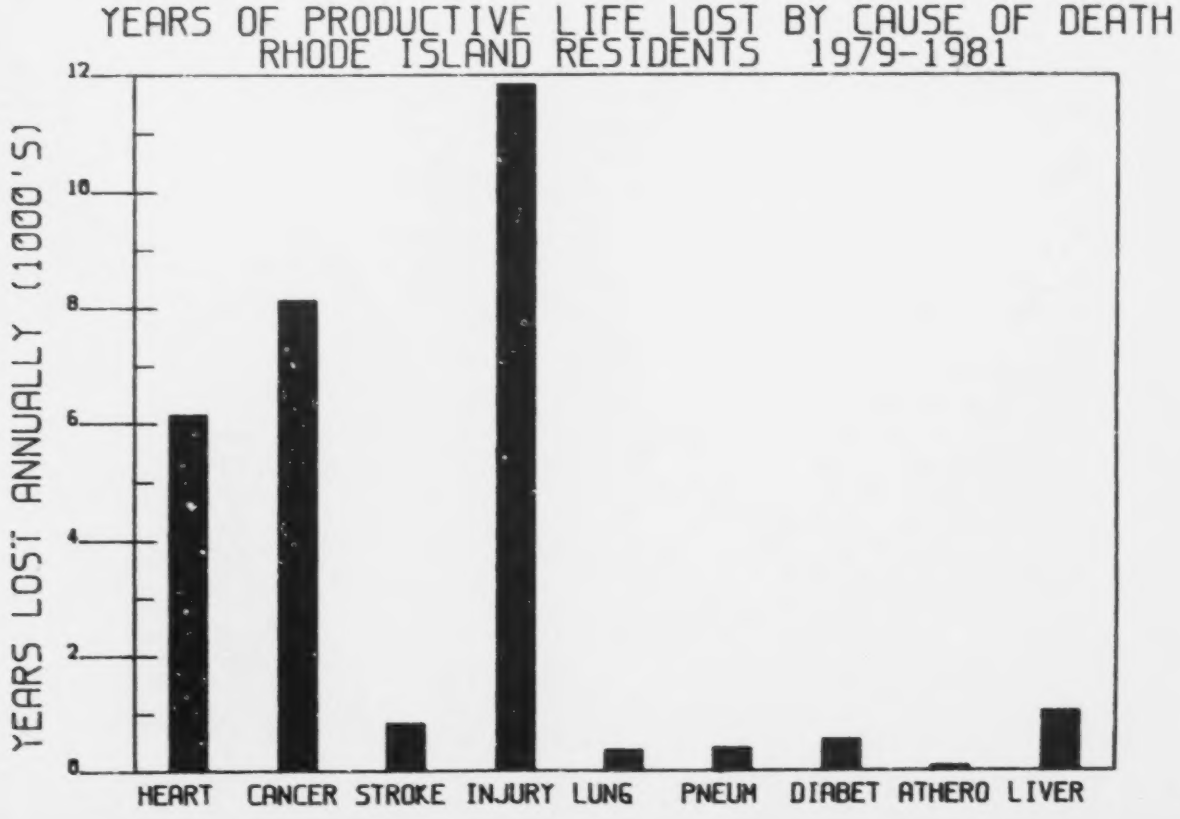
The role of injuries as a major killer in Rhode Island is easily recognized in the bottom chart which indicates years of life lost before age 65. Because injuries generally occur in a younger population, the societal impact of injuries goes beyond a count of fatalities alone. In terms of life lost before age 65, injuries are clearly the leader. On average there are 24.8 years of productive life lost per death from injury compared to 1.6 for heart disease, 3.8 for cancer, and 1.2 for stroke.

Injuries account for over a quarter (27.4%) of years of life lost for all leading causes listed below. The benefits of successful preventive efforts directed toward injuries would be very high in terms of years of life saved, an important measure of public health effectiveness.

Table I-1: Number of Deaths and Years of Life Lost Before Age 65, by Cause of Death, Rhode Island Residents, 1979-81

Cause of Death	Average Annual Number of Deaths	Average Annual Years of Life Lost Before Age 65
Heart Disease	3,814	6,161
Cancer	2,134	8,143
Stroke	684	819
Injuries	477	11,840
Chronic Lung Disease	264	370
Pneumonia and Influenza	197	401
Diabetes	193	540
Atherosclerosis	142	79
Chronic Liver Disease	141	1,029
All Other Causes	1,120	13,778
TOTAL	9,166	43,160


LEADING CAUSES OF DEATH
RHODE ISLAND RESIDENTS 1979-1981
AVERAGE ANNUAL NUMBER OF DEATHS
4000
3000
2000
1000
0
HEART
CANCER
STROKE
INJURY
LUNG
PNEUM
DIABET
ATHERO
LIVER


YEARS OF PRODUCTIVE LIFE LOST BY CAUSE OF DEATH
RHODE ISLAND RESIDENTS 1979-1981
YEARS LOST ANNUALLY (1000'S)
12
10
8
6
4
2
0
HEART
CANCER
STROKE
INJURY
LUNG
PNEUM
DIABET
ATHERO
LIVER

I-2. Major Types of Fatal Injuries

Fatal injuries include traffic fatalities, deaths due to falls, fires, poisonings, suffocations, and drownings, as well as homicides and suicides. Deaths from traffic accidents rank first among fatal injuries during the period 1979 to 1981 measured by both number of deaths and years of life lost before age 65. This is clearly recognizable in the table below and the charts opposite. On average there were 32.7 years of life lost per traffic fatality. A closer look at traffic fatalities is presented on the following pages.

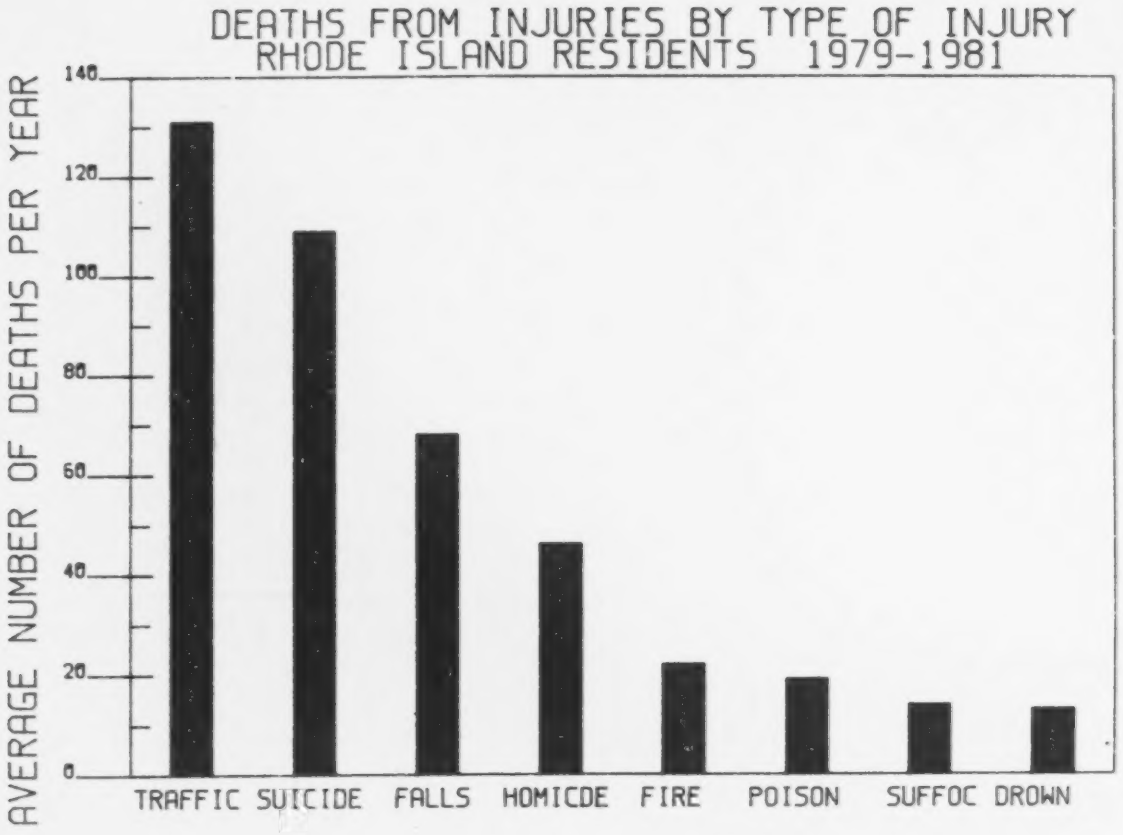
Suicides rank second among fatal injuries for both number of deaths and years of life lost. There were an average of 24.9 years of life lost before age 65 per suicide during the three-year period. Homicides, while ranking fourth in number of deaths among fatal injuries, follow suicides with respect to years of life lost. On average there were 31.0 years of life lost before age 65 per homicide. For both suicides and homicides, as with traffic deaths, the impact in terms of life lost before age 65 exceeds that for all other causes of death, except heart disease and cancer.

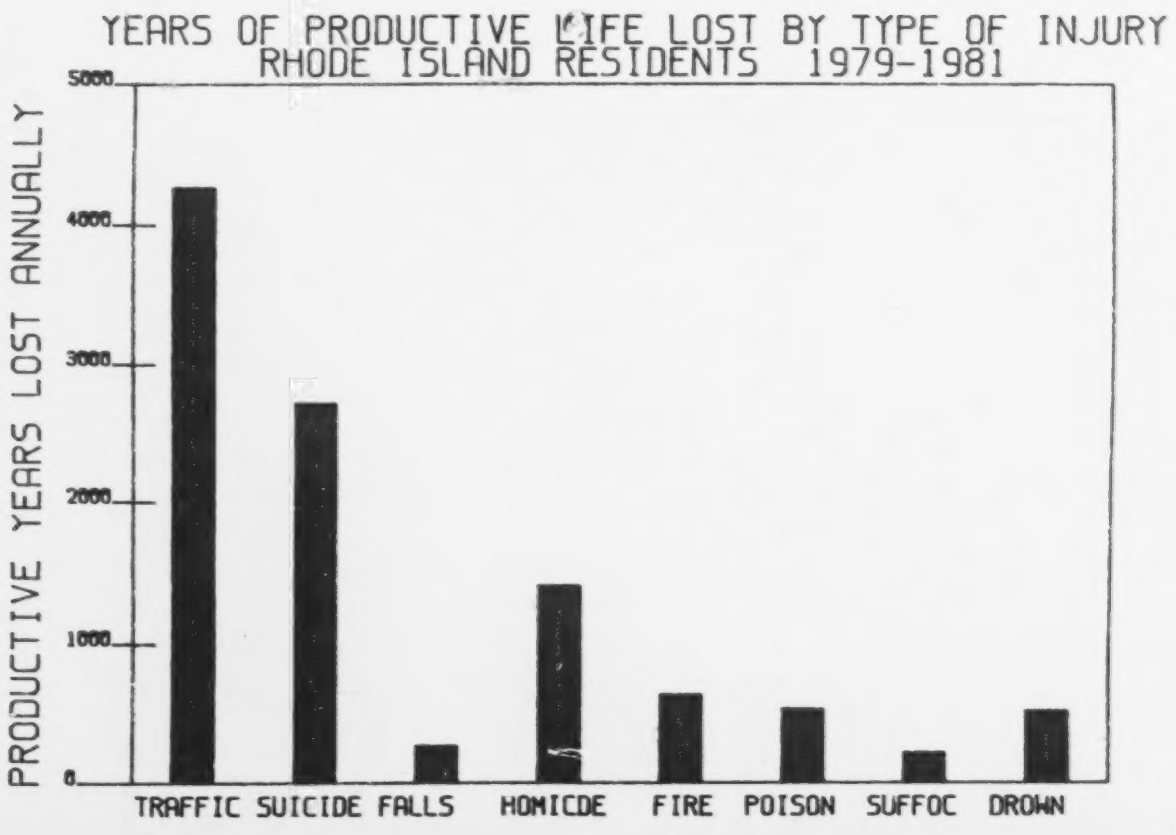
Fatal falls rank third among fatal injuries; however, their impact as measured by life lost before age 65 is among the lowest. Only 4.0 years of life lost are associated on average with each fatal fall compared to 24.8 years of life lost per fatal injury in general. Fatal falls occur primarily among the elderly, which largely explains this finding. Falls are discussed further on the pages which follow.

Among the remaining types of fatal injuries the average years of life lost before age 65 range from 39.1 years per drowning to 15.2 years per suffocation or choking death.

Table I-2: Number of Deaths and Years of Life Lost Before Age 65, by Type of Injury, Rhode Island Residents, 1979-81

Type of Fatal Injury	Average Annual Number of Deaths	Average Annual Years of Life Lost Before Age 65
Traffic Fatalities	131	4,267
Suicides	109	2,721
Falls	68	269
Homicides	46	1,416
Fires	22	637
Poisonings	19	536
Suffocations and Chokings	14	217
Drownings	13	521
All Other Injuries	55	1,256
TOTAL	477	11,840


DEATHS FROM INJURIES BY TYPE OF INJURY
RHODE ISLAND RESIDENTS 1979-1981
AVERAGE NUMBER OF DEATHS PER YEAR
140
120
100
80
60
40
20
0
TRAFFIC
SUICIDE
FALLS
HOMICDE
FIRE
POISON
SUFFOC
DROWN


YEARS OF PRODUCTIVE LIFE LOST BY TYPE OF INJURY
RHODE ISLAND RESIDENTS 1979-1981
PRODUCTIVE YEARS LOST ANNUALLY
5000
4000
3000
2000
1000
0
TRAFFIC
SUICIDE
FALLS
HOMICDE
FIRE
POISON
SUFFOC
DROWN

I-3. Deaths from Injuries Among Different Age Groups

The burden resulting from injury-related deaths in Rhode Island weighs most heavily on the younger age groups. The tremendous loss of individuals during their most productive years is felt both personally by their families as well as collectively by the community. The pattern of fatal injuries disproportionately occurring in the young holds true for all types of injury with the noted exception of falls. However, there are variations in the exact pattern of different types of fatal injuries through the life cycle. This is presented below and in the series of charts.

For the youngest age group, those up to 14 years old, the most common types of fatal injuries were traffic fatalities and fires, followed by homicides and drownings. An average of 29 deaths per year occurred in this age group during 1979 to 1981.

The next age group, adolescence through age 44, was the one most heavily stricken by fatal injuries with an average of 246 deaths per year. Over half of the total 477 deaths per year from all causes among all age groups occurred in this age group. For those 15 to 44 years old traffic fatalities and suicides were the dominant causes of death, followed by homicides.

In the age group 45 through 65, for whom there were an average of 82 deaths from injuries per year, the dominant cause by far was suicide, followed by traffic fatalities, homicides, and falls.

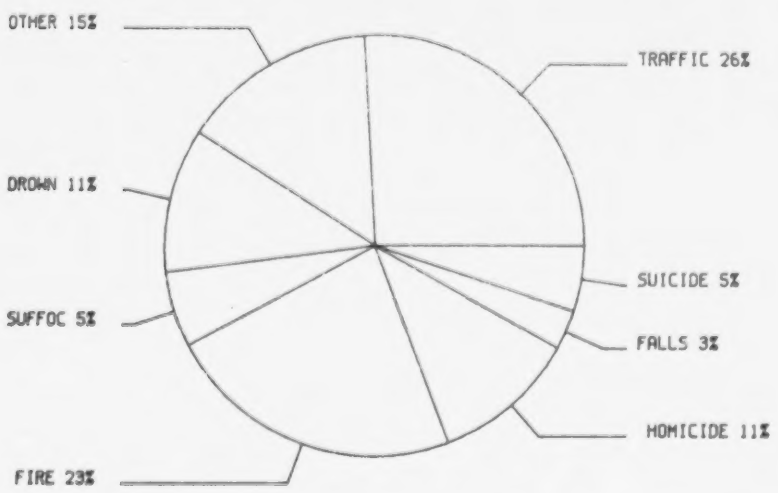
Finally, among the elderly, with an average of 121 deaths per year from injuries, nearly half of these deaths were caused by falls. Other major causes for the elderly, though far less prominent, were traffic fatalities and suicides. Thus, the distribution of deaths by type of injury differ substantially from one age group to the next and between each age group and the experience of the entire population.

Table I-3: Number of Deaths by Type of Injury by Age Group
Rhode Island Residents, 1979-1981

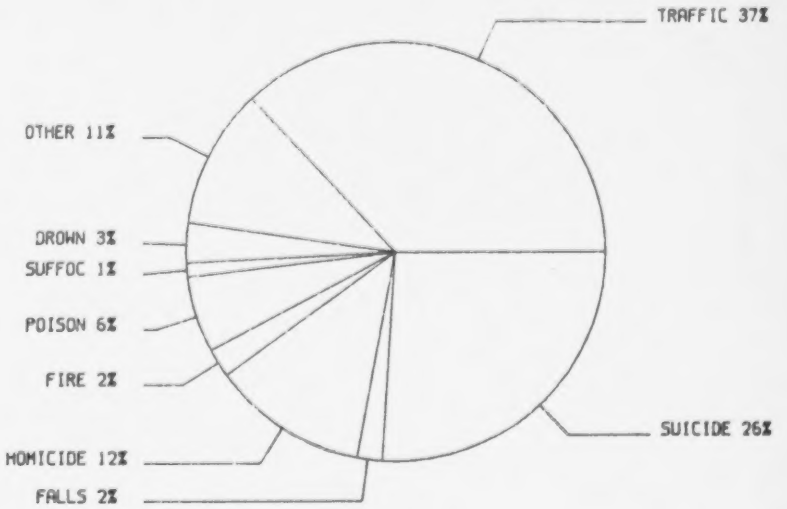
Type of Fatal Injury	0-14 Years	15-44 Years	45-64 Years	65 Years and Older	All Ages
Traffic Accidents	23	276	42	51	392
Suicides	4	193	87	44	328
Falls	3	14	22	165	204
Homicides	10	92	22	13	137
Fires	20	17	13	16	66
Poisonings	0	41	10	6	57
Suffocations and Chokings	5	8	10	20	43
Drownings	10	24	3	3	40
All Other Injuries	12	72	37	44	165
Total	87	737	246	362	1,432

DEATHS BY TYPE OF INJURY FOR FOUR AGE GROUPS
RHODE ISLAND RESIDENTS 1979-1981

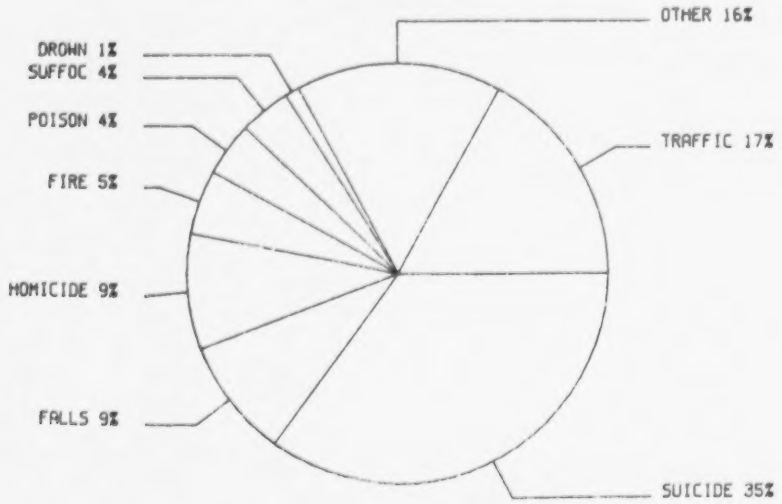
AGES 0-14



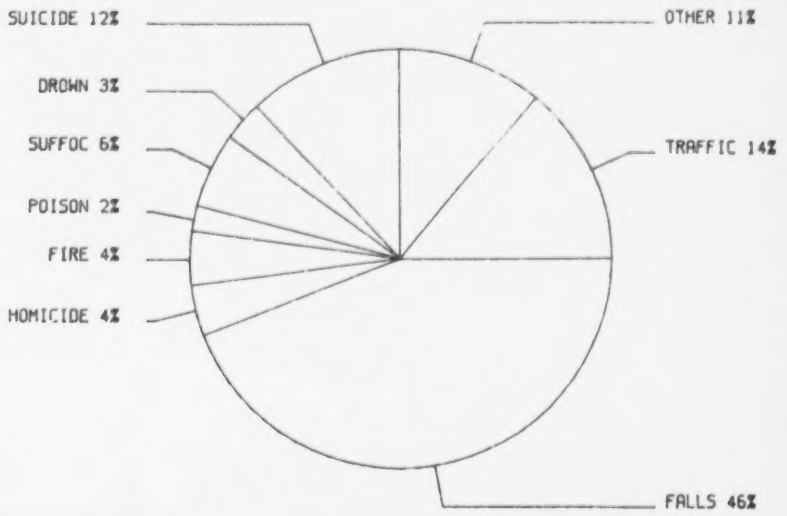
AGES 15-44



AGES 45-64



AGE 65+



I-4. Traffic Fatalities

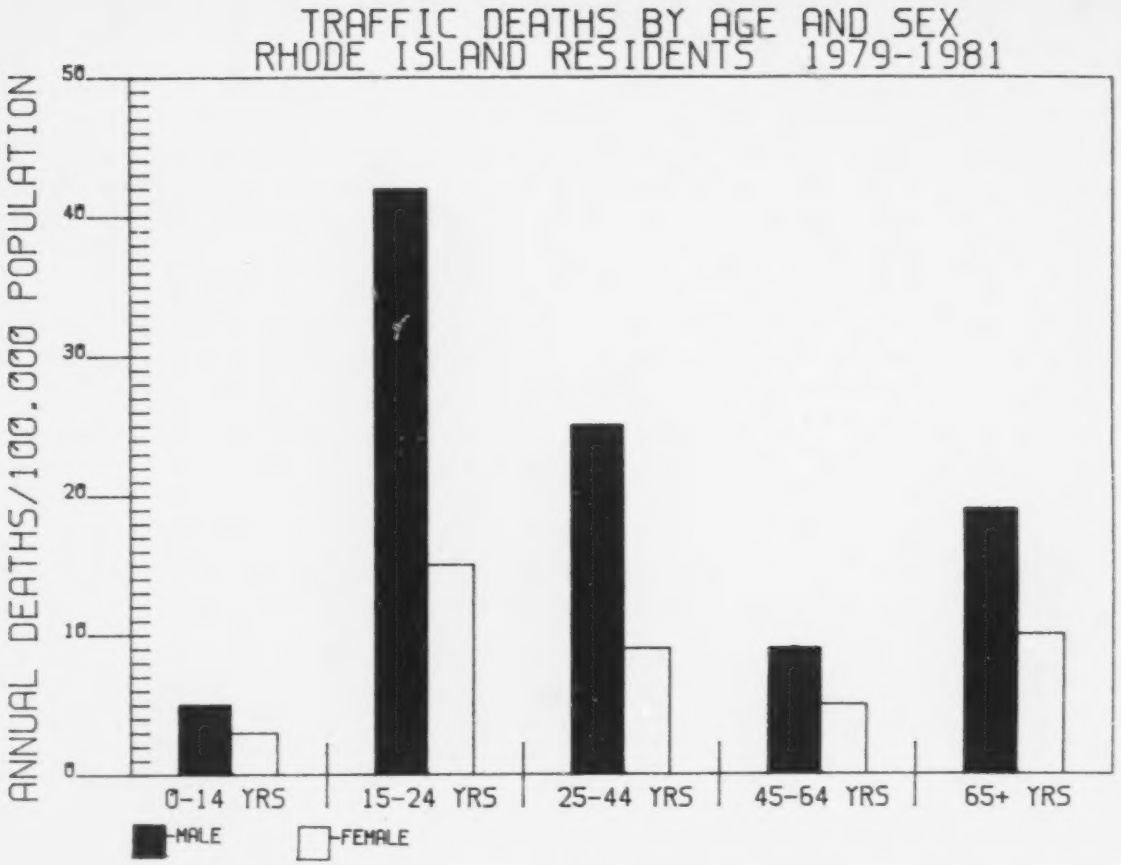
Traffic fatalities represent the major cause of death among types of injury whether measured by number of deaths or years of life lost before age 65. Traffic fatalities include fatal injuries to drivers and passengers of cars, trucks, buses, vans, and motorcycles, as well as bicyclists and pedestrians. Over the three-year period 1979-1981, traffic accidents were the cause of 27 percent of all deaths from injuries and 36 percent of all years of life lost due to injuries. Compared to deaths from all causes, traffic accidents accounted for only 1.4 percent of deaths but nearly 10 percent of all years of life lost.

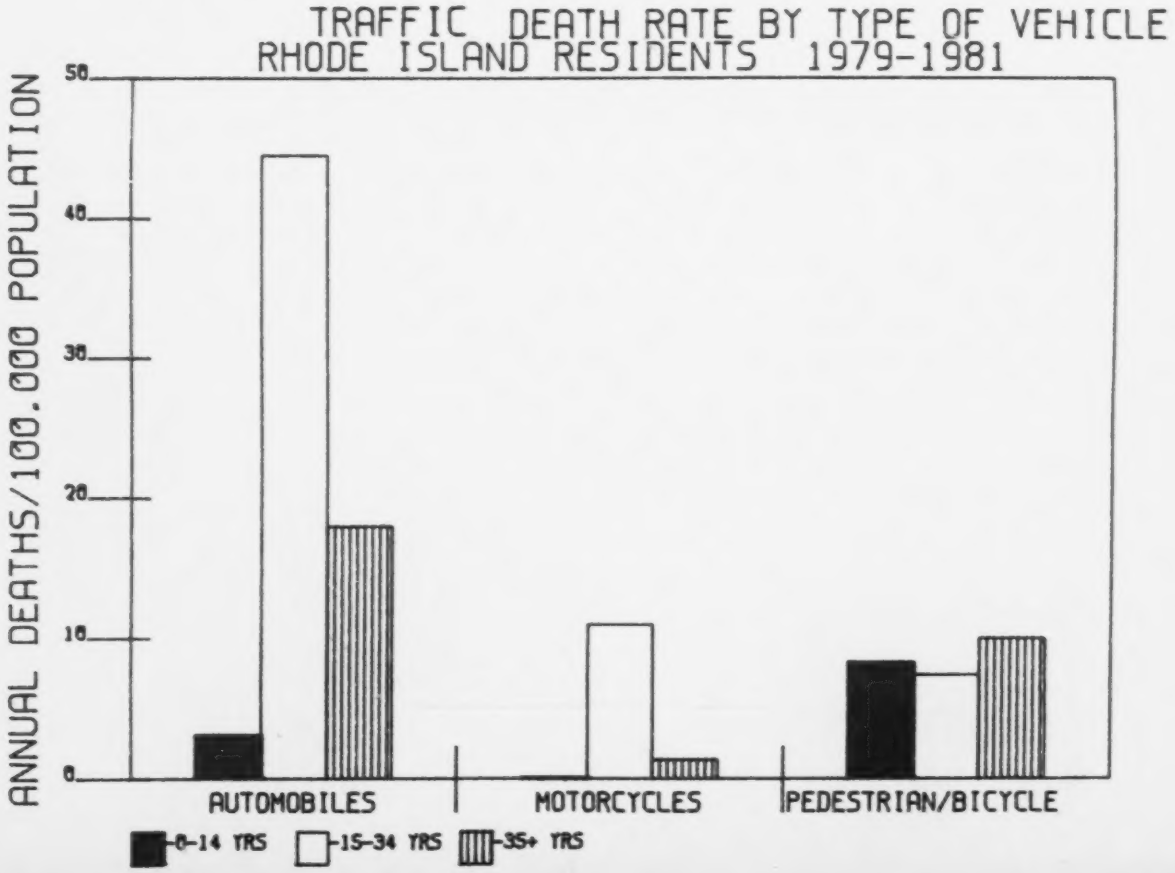
As presented in the top chart, broad variation is found in traffic fatality rates among different age and sex groups. Rates peak for both sexes in the 15 to 24 year age group. The highest rate is found among males in the 15 to 24 year age group (41.9 deaths per 100,000 population); the lowest rate is for females under age 15 (3.2 deaths per 100,000). There is a greater than ten-fold difference between these two rates. After peaking in the 15 to 24 year age group, traffic death rates for both sexes decline through age 64, after which the rate approximately doubles.

For all age groups, death rates for males are much higher than for females. Death rates for males approach three times those for females in the 15 to 24 year and 25 to 44 year age groups, and male death rates are approximately twice as high as female in the remaining age groups.

The pattern of traffic deaths according to the type of vehicle involved also varies significantly with age group as seen in the bottom chart opposite. Among the very youngest victims, the majority of deaths were those occurring to pedestrians or bicyclists, with the remainder being passengers of automobiles, buses, trucks, or vans. In the middle age group, the majority of deaths were those of drivers and passengers of automobiles, etc., as expected, but the death rate for motorcyclists and their passengers was approximately one-quarter as high. That rate should be viewed in light of the relative number of motorcyclists and relative mileage traveled to get a proper measure of risk.

Finally, among those aged 35 and older, the death rate for automobile drivers and passengers ranks highest, being about twice as high as the death rate for pedestrians and bicyclists. Within this age group, deaths of pedestrians occur far more frequently to the elderly, with nearly two-thirds of the victims being 65 years old or older.


TRAFFIC DEATHS BY AGE AND SEX
RHODE ISLAND RESIDENTS 1979-1981
ANNUAL DEATHS/100,000 POPULATION
50
40
30
20
10
0
0-14 YRS
15-24 YRS
25-44 YRS
45-64 YRS
65+ YRS
MALE
FEMALE

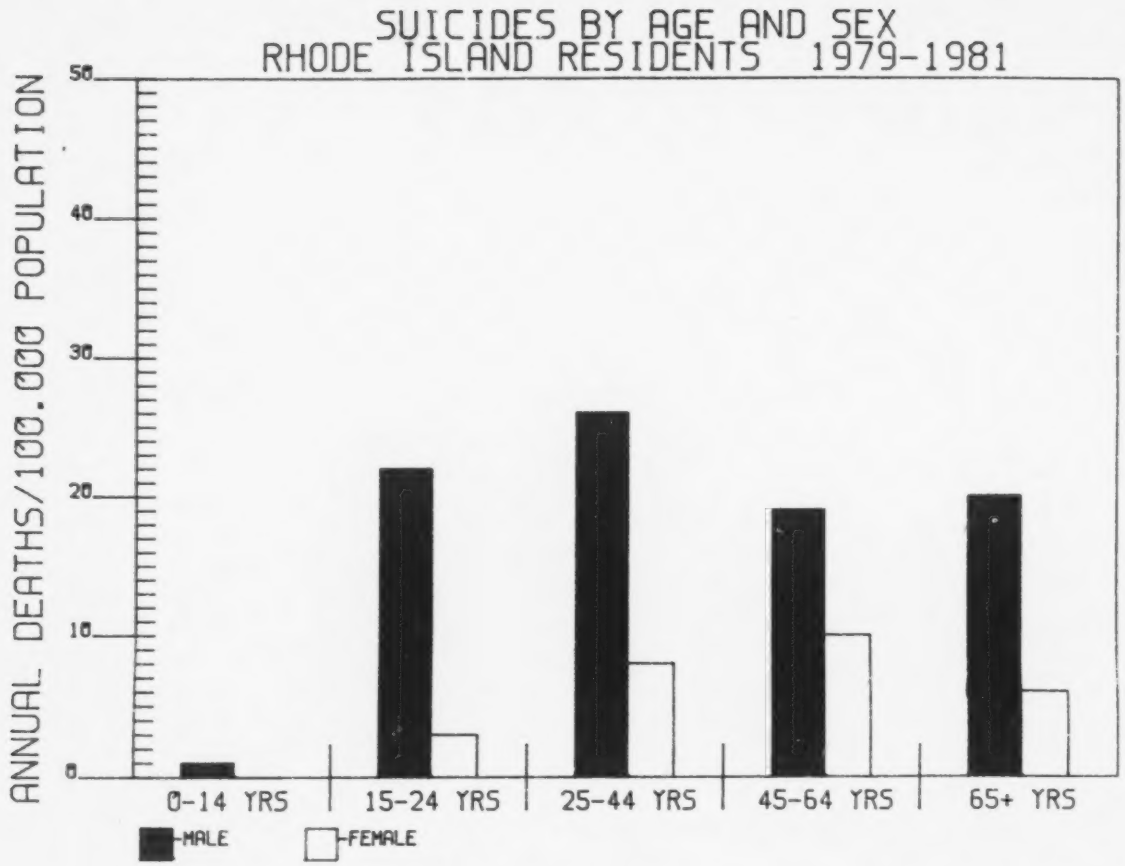

TRAFFIC DEATH RATE BY TYPE OF VEHICLE
RHODE ISLAND RESIDENTS 1979-1981
ANNUAL DEATHS/100,000 POPULATION
50
40
30
20
10
0
AUTOMOBILES
MOTORCYCLES
PEDESTRIAN/BICYCLE
0-14 YRS
15-34 YRS
35+ YRS

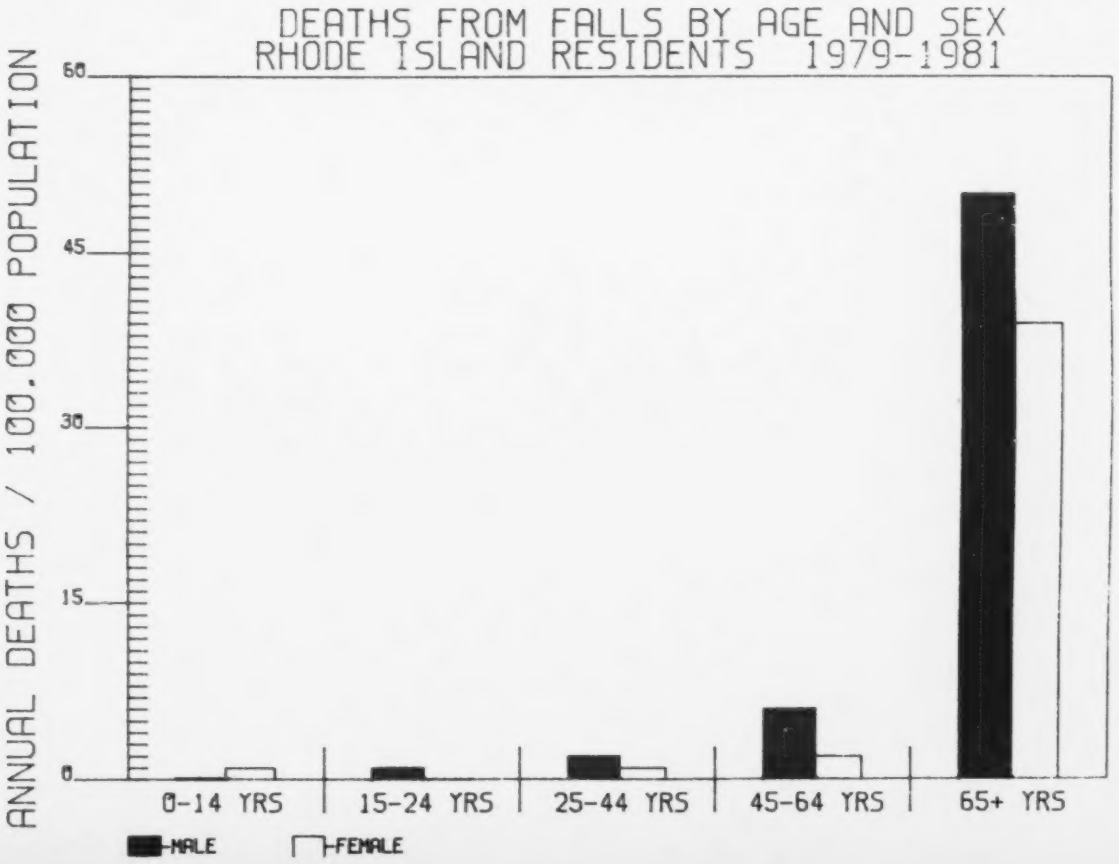
I-5. A Closer Look at Suicides and Fatal Falls

As indicated earlier, suicides and falls follow traffic fatalities as leading causes of injury-related deaths. Suicides rank second in both number of deaths, with 23 percent of all deaths from injuries, and years of life lost before age 65, with 23 percent of all those due to injuries. Falls present a much different pattern, ranking third in number of deaths, with 14 percent of all deaths from injuries, and far down the list in years of life lost, with just 2.3 percent of those due to injuries. This disparity is also reflected in the age-sex specific death rates from these two types of injuries.

As presented in the top chart, the variation of the suicide rate with age is different for the two sexes. After childhood and early adolescence, the suicide rate for males is relatively stable, varying between 18.9 deaths per 100,000 population and 25.8 deaths per 100,000. For females, there is a slow increase in suicide rates with age through the 45 to 64 year age group, after which there is a small decline. In all age groups, rates for women are far lower than for men; the age group where this difference is least is the 45 to 64 year age group where female rates are only 54 percent of males rates. A much different pattern is seen in hospital admissions by sex for suicides and attempted suicides during this period; the number of admissions of females is more than 80 percent higher than that for males.

The lower chart shows that the age distribution of deaths from falls is unique among the major types of injuries. Unlike other major injury types, fatal falls occur almost entirely in the elderly. Over eighty percent of all fatal falls occur to those age 65 and older, and the death rate per 100,000 population in that age group is ten times the rate for any younger age group. Furthermore, the rates continue to increase sharply with age, being 29.1 deaths per 100,000 for those age 65 to 74 years, 180.3 deaths per 100,000 for those age 75 to 84 years, and 601.1 deaths per 100,000 for those age 85 and older. At the higher ages, however, an increasingly larger percentage of deaths are due to easily preventable household falls, including falls from bed, downstairs, and even falls on the same level, such as falling to the floor. Deaths of this nature are a severe risk to the elderly and can be prevented through appropriate interventions.


SUICIDES BY AGE AND SEX
RHODE ISLAND RESIDENTS 1979-1981
ANNUAL DEATHS/100.000 POPULATION
50
40
30
20
10
0
0-14 YRS
15-24 YRS
25-44 YRS
45-64 YRS
65+ YRS
MALE
FEMALE


DEATHS FROM FALLS BY AGE AND SEX
RHODE ISLAND RESIDENTS 1979-1981
ANNUAL DEATHS / 100.000 POPULATION
60
45
30
15
0
0-14 YRS
15-24 YRS
25-44 YRS
45-64 YRS
65+ YRS
MALE
FEMALE

Section II - Demographics

Trends in Natality and Infant Mortality, 1974-1981

II-1. Infant and Neonatal Mortality Rates

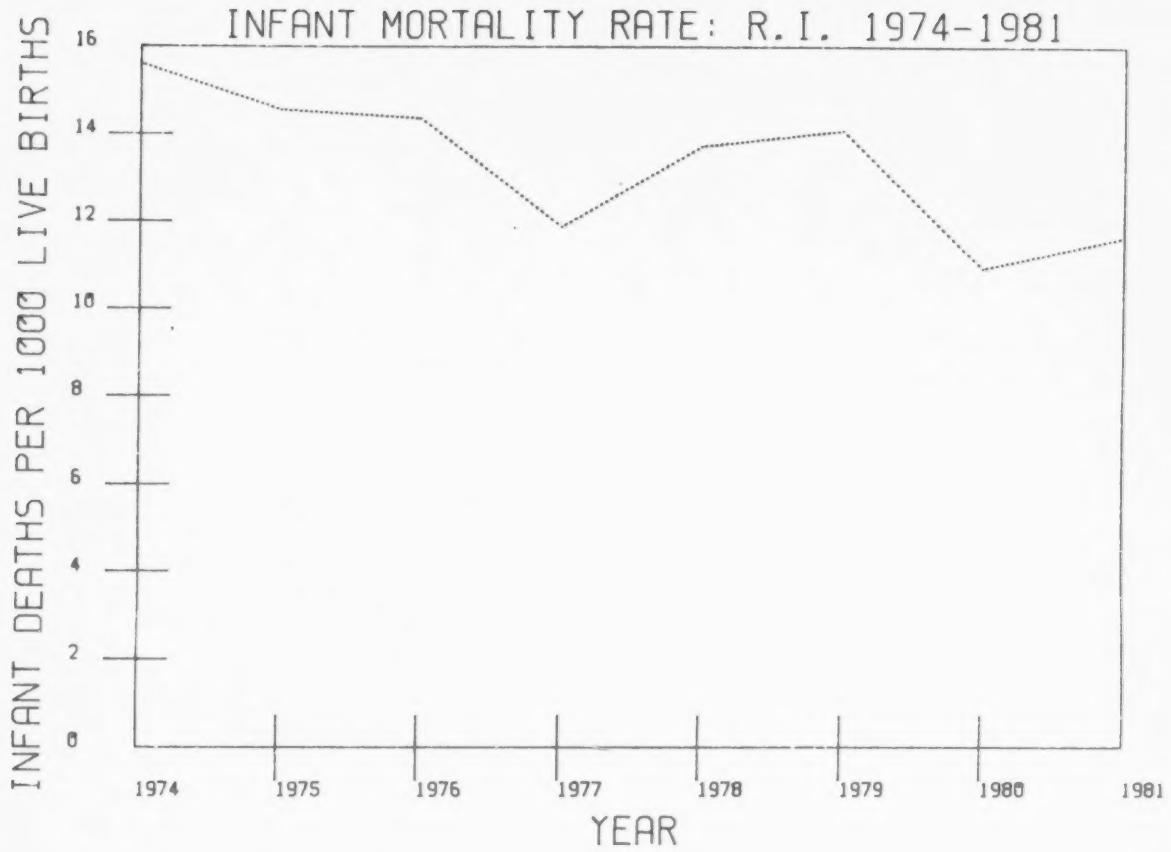
Infant mortality, deaths occurring in the first and most vulnerable year of life, is a key index of the health of a population. In the United States, the infant mortality rate or number of deaths per 1,000 live births, declined steadily from 1900 until the mid-1950's, after which followed a decade of nearly constant rates. In the mid 1960's, the infant mortality rate turned sharply downward again, falling by nearly half between 1965 and 1980. For neonatal mortality, deaths in the first 28 days of life, the rates declined even more substantially over the 15-year period, and the decline was greater still for deaths in the first seven days of life.

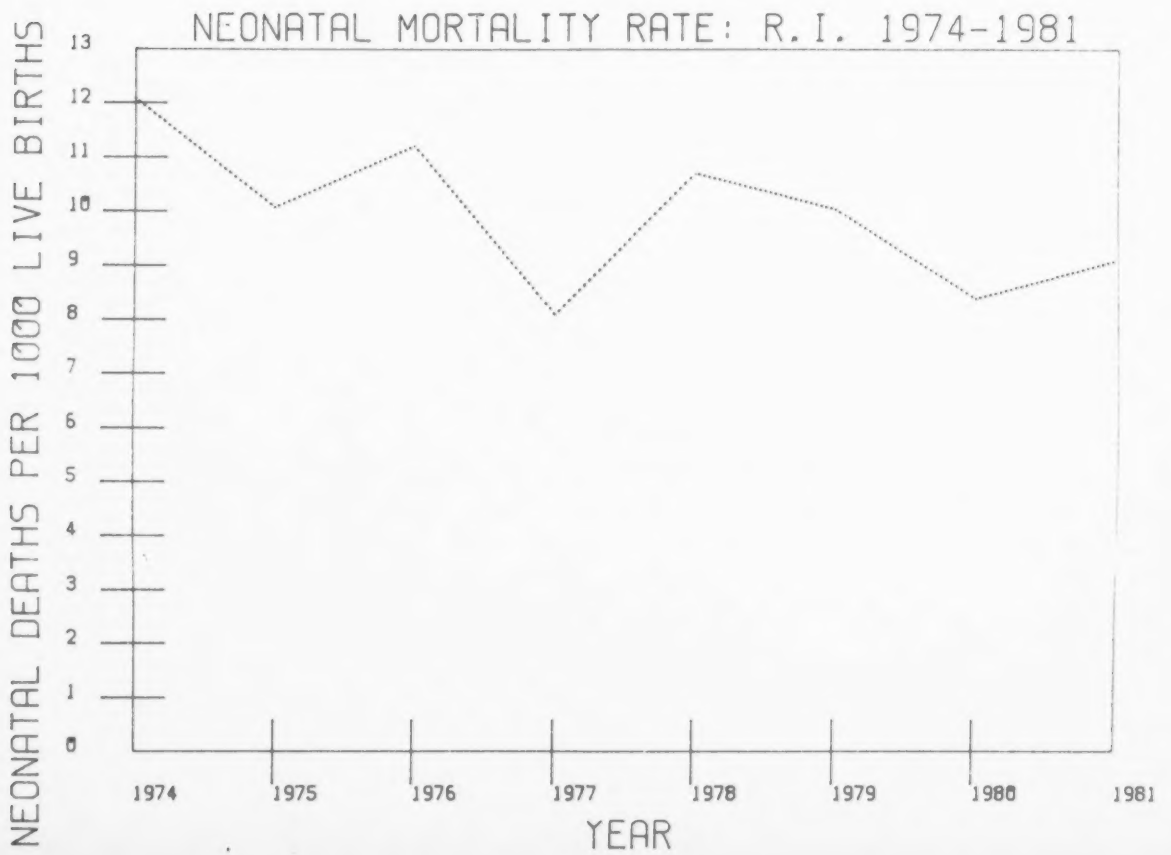
Despite this overall decline in mortality rates in the United States, there are still substantial variations in infant mortality among different areas of the country and different subgroups of the population. During the years 1977-79, the infant mortality rate varied from a low of 9.9 deaths per 1,000 live births in Maine to a high of 18.1 in Mississippi. For the same period, the national rate was 13.6; Rhode Island stood slightly below the national average at 13.3 infant deaths per 1,000 live births. National statistics also show substantial variations in infant mortality by race of the child during the period 1977-79. The rate for black infants stood at 22.8, nearly double the rate for white infants (11.9). Rhode Island's rates for both races were higher than the national average, slightly so for white infants at 12.0 deaths per 1,000 live births, but substantially so for black infants at 32.9 deaths per 1,000 live births. The rate for black infants placed Rhode Island second among all states, behind only Vermont, which has a very small black population from which to determine rates.

Annual data from Vital Statistics for Rhode Island show evidence of an observable decrease overall in both infant and neonatal mortality rates from 1974 to 1981, though year-to-year changes are inconsistent partially as a result of statistical fluctuations. (See below and opposite). The increasing utilization of the Neonatal Intensive Care Unit, introduced at Women and Infants Hospital in 1973, has been an important factor in recent neonatal mortality trends. These declines in mortality rates also were concurrent with a steady increase in average birthweight and average number of prenatal visits and a decrease in low birthweight rate, all influential variables. (See Section II-2.)

Table II-1: Infant and Neonatal Deaths with Associated Rates, Rhode Island Residents, 1974-1981

Year	Live Births	Infant Deaths	Infant Mortality Rate	Neonatal Deaths	Neonatal Mortality Rate
1974	11,337	177	15.6	137	12.1
1975	10,724	156	14.6	108	10.1
1976	10,786	155	14.3	121	11.2
1977	11,617	138	11.9	94	8.1
1978	11,515	158	13.7	121	10.5
1979	11,860	167	14.1	119	10.0
1980	12,166	133	10.9	102	8.4
1981	12,430	145	11.7	114	9.2


INFANT MORTALITY RATE: R.I. 1974-1981
INFANT DEATHS PER 1000 LIVE BIRTHS
16
14
12
10
8
6
4
2
0
1974
1975
1976
1977
1978
1979
1980
1981
YEAR


NEONATAL MORTALITY RATE: R.I. 1974-1981
NEONATAL DEATHS PER 1000 LIVE BIRTHS
13
12
11
10
9
8
7
6
5
4
3
2
1
0
1974
1975
1976
1977
1978
1979
1980
1981
YEAR

II-2. Average Birthweight, Average Number of Prenatal Visits, and Low Birthweight Rate

The recent decline in infant mortality rates (See Section II-1.) can be understood by looking at its two statistical components, the distribution of births by birthweight, and the mortality rates by birthweight group. Over the period 1965-1980, approximately four-fifths of the decline in infant mortality has been due to declines in the mortality rates within birthweight groups, especially among low-birthweight infants (i.e., weighing less than or equal to 2,500 grams or 5 lbs., 8 oz. at birth). These declines are attributed primarily to advances in the technology of neonatal care and its greater availability through the establishment of regional perinatal networks.

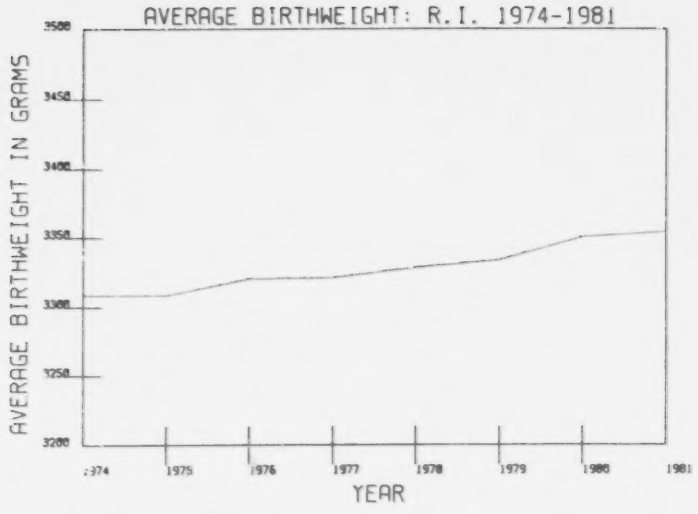
On the other hand, less than one-fifth of the decline in mortality over the 15-year period is believed to be due to the decline in the frequency of low birthweight births. The national rate of low birthweight birth declined by only 15 percent from 1967-69 to 1977-79, and the rate of births with birthweight of 1500 grams or less remained nearly constant. It is thought that further substantial reductions in infant mortality depend on lowering the number of such high-risk births. However, efforts in this area are complicated by the fact that many physical and environmental variables affect birthweight. In particular, maternal behavior in such areas as nutrition, smoking, consumption of alcohol and caffeine, and prenatal weight gain is subject to improvement through counseling received during prenatal care. Therefore, the level of care, measured here as the number of prenatal medical visits, may have a significant impact upon birthweight.

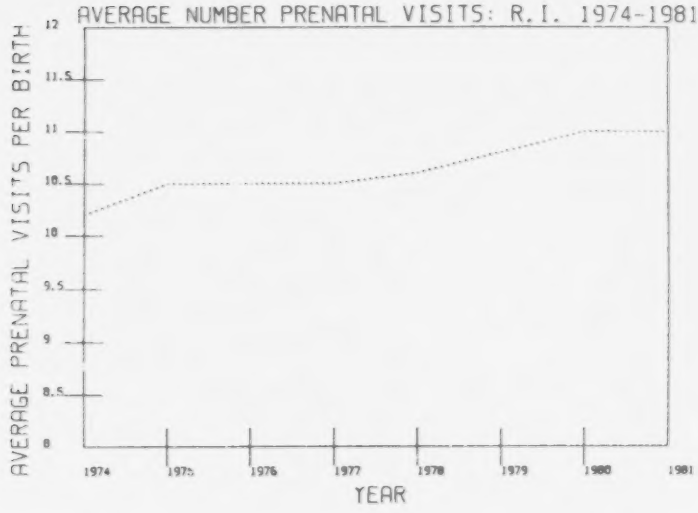
In 1981, the average birthweight and average number of prenatal visits per birth in Rhode Island were 3354 grams and 11.0 visits respectively. These figures capped a steady and favorable increase since 1974 in both categories. The low birthweight rate declined overall, culminating in a seven-year low of 59.2 such births per 1,000 live births in 1981. (See below and opposite.)

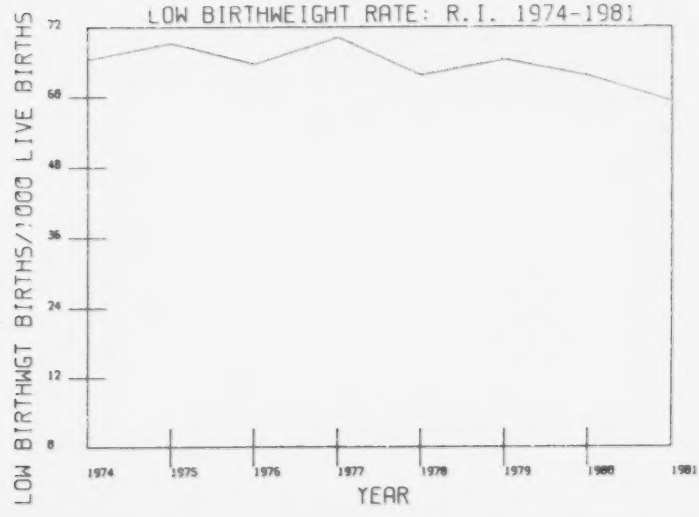
Nationally, the average annual low birthweight rate for 1977-79 was 70 per 1,000 live births compared to 64 for New England states and 67 for Rhode Island. Hence, Rhode Island compared favorably nationally, but ranked fifth in New England.

Table II-2: Live Births, Average Birthweight, Low Birthweight Births, Low Birthweight Rate, Average Prenatal Care Visits, Rhode Island Residents, 1974-1981

Year	Live Births	Average Birthweight	Low Birthweight Births	Low Birthweight Rate	Average Prenatal Visits
1974	11,337	3309 g	754	66.5	10.2
1975	10,724	3309 g	743	69.3	10.5
1976	10,786	3321 g	709	65.7	10.5
1977	11,617	3321 g	817	70.3	10.5
1978	11,515	3329 g	734	63.7	10.6
1979	11,860	3334 g	788	66.4	10.8
1980	12,166	3351 g	774	63.6	11.0
1981	12,430	3354 g	736	59.2	11.0


AVERAGE BIRTHWEIGHT: R.I. 1974-1981
AVERAGE BIRTHWEIGHT IN GRAMS
3450
3400
3350
3300
3250
3200
1974
1975
1976
1977
1978
1979
1980
1981
YEAR


AVERAGE NUMBER PRENATAL VISITS: R.I. 1974-1981
AVERAGE PRENATAL VISITS PER BIRTH
12
11.5
11
10.5
10
9.5
9
8.5
8
1974
1975
1976
1977
1978
1979
1980
1981
YEAR


LOW BIRTHWEIGHT RATE: R.I. 1974-1981
LOW BIRTHWGT BIRTHS/1000 LIVE BIRTHS
72
60
48
36
24
12
0
1974
1975
1976
1977
1978
1979
1980
1981
YEAR

Section III - Health Costs

Rhode Island's Health Expenditures - 1980 Funds Flow

III-1. Total Health Expenditures

The increasing cost of health care continues to be an important issue for Rhode Island and the nation. During 1980 Rhode Island's health bill exceeded a benchmark billion dollars for the first time. Nationally total health expenditures were $249.0 billion.*

Primary concern is directed not on total health expenditures per se, but on their burgeoning growth rate and the increasing proportion of total statewide and national economic activity which they represent.

Total Rhode Island and national health expenditure levels for the six-year period ending 1980 are presented on the table below; their concommitant growth rates are compared on the chart opposite.

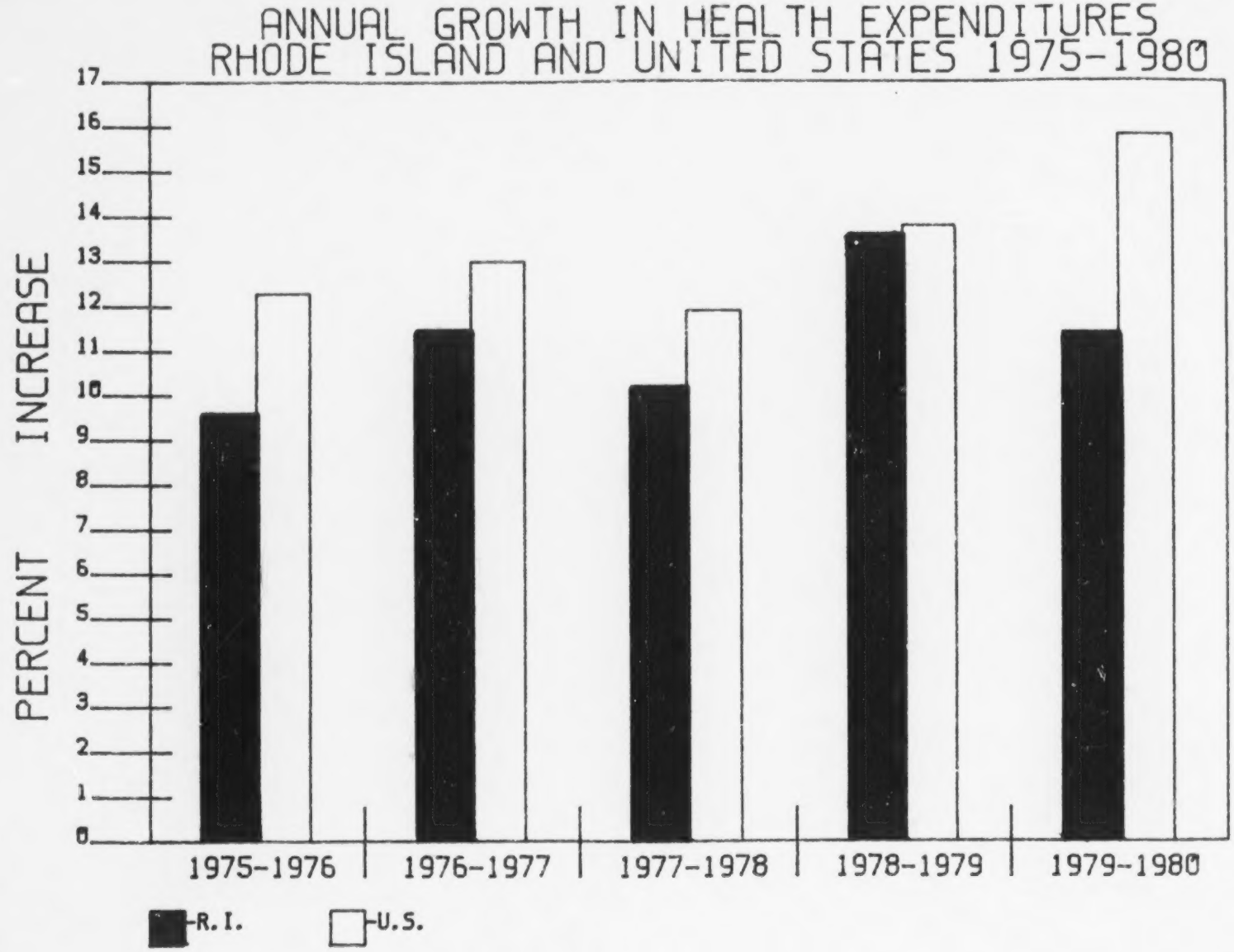
Clearly Rhode Island's annual health expenditures have consistently exhibited a slower growth rate than the nation during this period. For the years considered the average annual rate of increase for Rhode Island was 11.2 percent, for the nation 13.4 percent.

Table III-1: Annual Health Expenditures, Rhode Island and United States, 1975-1980

YEAR	Annual Health Expenditures RHODE ISLAND (in $ Millions)	UNITED STATES (in $ Billions)
1975	622.7	132.7
1976	682.4	149.7
1977	760.3	169.2
1978	857.6	189.3
1979	949.1	215.0
1980	1,056.8	249.0

*Total health expenditures include:

-all spending for the health of individuals,
-the administrative costs of non-profit and government health programs,
-the net cost to enrollees of private health insurance,
-government expenditures designed to promote health in general,
-non-commercial health research, and
-construction of medical facilities.


ANNUAL GROWTH IN HEALTH EXPENDITURES
RHODE ISLAND AND UNITED STATES 1975-1980
PERCENT INCREASE
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
1975-1976
1976-1977
1977-1978
1978-1979
1979-1980
R.I.
U.S.

III-2. Health Expenditures by Type

The distribution of health expenditures by type of expenditure for 1980 is presented on the opposite page for both Rhode Island and the United States. The state and national data are strikingly similar, as they have been since the early 1970's when Rhode Island first began tracking the flow of health expenditures.

Personal health expenditures, the composite of all categories for direct patient treatment services, continue to account for the major share (87.1%) of Rhode Island's health expenditures and those of the nation (88.2%).

Inpatient services alone, including hospital and nursing home services, account for over half of Rhode Island's total health expenditures (54.1%) and close to half of those for the nation (48.6%). This is particularly significant in light of the increasing rates of growth observed in these two categories in recent years as discussed on the next page.

Hospital services by themselves are perhaps most noteworthy. Over the past decade more than forty percent of Rhode Island and national health spending has consistently gone to pay hospital bills each year.

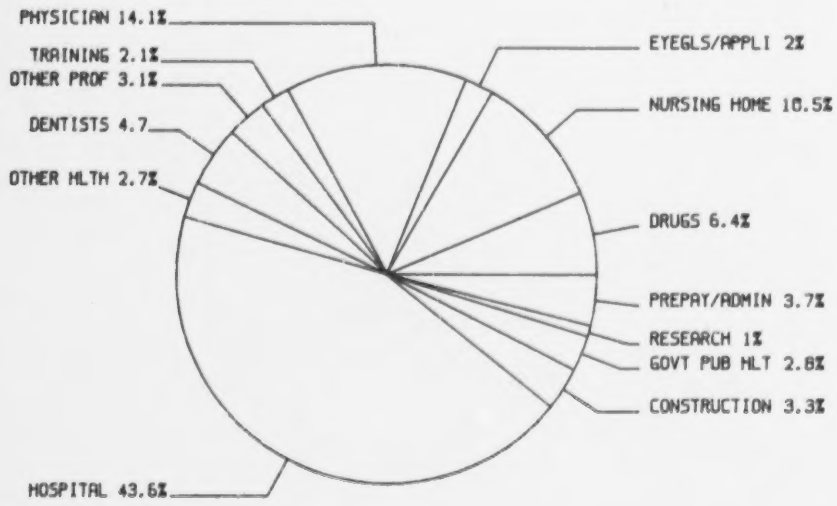
Finally, the relatively small investment in government public health spending warrants consideration. Government, both statewide and nationally, continues to play an increasing role in health care financing. Each year vast sums of tax-levied funds are expended primarily to support direct patient services in the forms of insurance, patient reimbursement programs, and the provision of services through government facilities. The very small proportion of government spending devoted to public health activities is dwarfed by comparison. Government's public health activities include programs designed to measure community health status, promote good health, control illness and injury, and protect consumers from unsafe or ineffective treatments in the health marketplace.

In 1979 Rhode Island's total health care bill was $949.0 million, $409.8 (43%) of which was financed by government sources. Of this $410. million in taxpayers' funds only 7 percent was devoted to public health activities. The remaining 93 percent went largely to pay for direct patient services for the elderly, poor, and disabled, primarily for hospital (59%) and nursing home care (13%). Similar proportions of relative investment are observable in national health expenditure patterns.

DISTRIBUTION OF HEALTH EXPENDITURES BY TYPE
RHODE ISLAND AND UNITED STATES - 1980

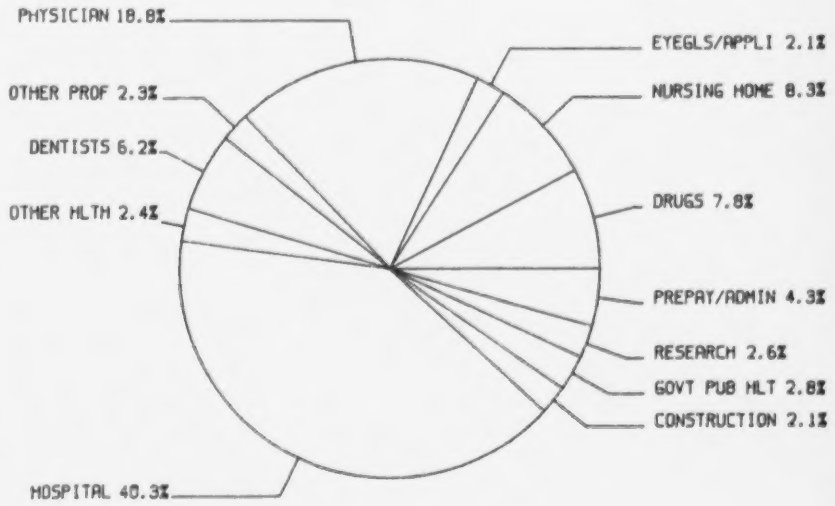
RHODE ISLAND 1980

(TOTAL = 1.056 BILLION DOLLARS)



UNITED STATES 1980

(TOTAL = $249.0 BILLION DOLLARS)



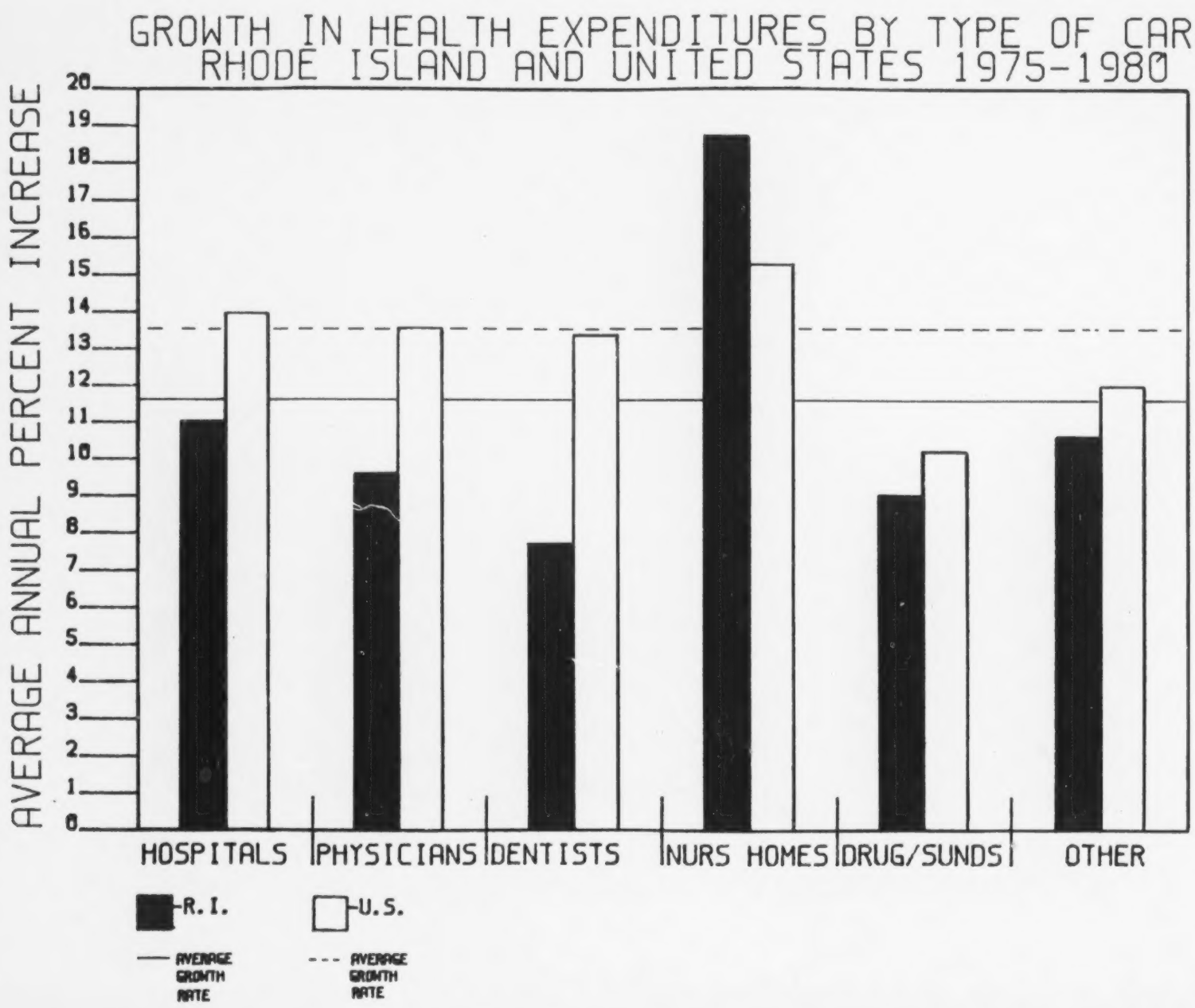
III-3. Expenditure Growth Rates by Type

Source data from the preceding pages are combined in the chart opposite to present specific growth rates for selected types of expenditures. This provides a focus on which types of health expenditures have contributed most heavily to overall increases in personal health spending.

For the six-year period considered total health spending grew at an average annual rate of 11.2 percent for Rhode Island and 13.4 percent for the nation. Personal health spending, which constitutes close to 90 percent of total health spending in both cases, grew at virtually the same rates as total health spending (R.I.: 11.1%/U.S.: 13.4%) Rhode Island consistently exhibited growth at a slower pace than that of the nation for both total and personal health expenditures.

The same does not quite hold true within individual personal health expenditure categories during this same period. Marked variation in growth rates are readily observable among the individual categories. Rhode Island's growth rates are consistently lower except in the case of nursing home care. Rhode Island's expenditures for nursing home care grew at an average annual rate of 18.7 percent, exceeding 15.3 percent nationally and far outpacing all other rates posted here.

Expenditures for nursing home services and hospital care, in rank order, grew at the highest rates for both Rhode Island and the nation. Growth in expenditures for nursing home care accelerated well above the average annual growth rate for overall personal health spending in both cases. This increasing investment in hospital and nursing home care can be at least partially attributed to the aging Rhode Island population; Rhode Island is currently "older" than the nation overall. As has been pointed out, however, these particular facility-based services represent more than half of total annual health expenditures. Whether this trend of accelerated growth in these areas of major expenditure can continue is a concern of great magnitude for Rhode Island and the nation.


GROWTH IN HEALTH EXPENDITURES BY TYPE OF CARE
RHODE ISLAND AND UNITED STATES 1975-1980
AVERAGE ANNUAL PERCENT INCREASE
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
HOSPITALS
PHYSICIANS
DENTISTS
NURS HOMES
DRUG/SUNDS
OTHER
R.I.
U.S.
AVERAGE GROWTH RATE
AVERAGE GROWTH RATE

III-4. Per Capita Health Expenditures

Per capita expenditures allow for more objective comparison between Rhode Island and national health spending levels. Per capita expenditures eliminate the influence of population size and differential population growth. The table below reports per capita total health expenditures for Rhode Island and the United States for the six-year period ending 1980.

Both state and national per capita expenditures show continuous increase during this period, although at different rates. Once again Rhode Island's growth rate is less than that of the nation. The growth rates for per capita health expenditures below are interesting to compare with the respective average annual population growth rates during this same period. (R.I.: + 0.3%/U.S.: + 1.1%) Clearly per capita expenditure growth far exceeds population growth.

The state and national per capita health expenditure estimates are remarkably similar, with Rhode Island slightly higher than the nation throughout this period. The two may move even closer together if current growth rate patterns continue. The rightmost column of the table below demonstrates this possibility.

The table opposite presents per capita health expenditures by category for 1980. Remarkable similarity exists between state and national estimates in most categories. Facility-based services, however, again warrant close attention. Rhode Island's per capita hospital and nursing home expenditures exceed those nationally by 12.3 percent and 31.5 percent, respectively.

Note that although Rhode Island's total per capita health expenditure remains consistently above that of the United States, the same does not hold true among individual expenditure categories.

Table III-2: Per Capita Health Expenditures, Rhode Island and United States, 1975-1980

	Rhode Island		United States		
Year	Per Capita Expenditure	Change From Previous Year	Per Capita Expenditure	Change From Previous Year	Rhode Island/ United States Ratio
1975	$665.96	———	$603.00	———	110%
1976	$729.09	+9.5%	$674.32	+11.8%	108%
1977	$811.37	+11.3%	$754.68	+11.9%	106%
1978	$895.84	+10.4%	$835.39	+10.7%	107%
1979	$1,008.59	+12.6%	$938.45	+12.3%	108%
1980	$1,115.91	+10.6%	$1,074.67	+14.5%	104%

Table III-3: Per Capita Health Expenditures by Type, Rhode Island and United States, 1980*

TYPE OF EXPENDITURE:	Rhode Island 1980 Per Capita	United States 1980 Per Capita	R.I./U.S. Ratio
Hospitals	486.69	433.32	112%
Physician Services	157.72	201.99	78%
Dentists' Services	52.46	66.47	79%
Other Professionals**	35.11	24.17	146%
Drugs, Sundries	71.24	83.30	86%
Eyeglasses and Appliance	22.01	22.01	100%
Nursing Homes	116.83	88.91	131%
Other Health Services	29.97	25.90	116%
PERSONAL HEALTH SERVICES	972.03	946.91	102%
Prepayment and Administration	40.93	46.18	89%
Government Public Health Activities	31.46	30.21	104%
HEALTH SERVICES AND SUPPLIES	1,044.42	1,023.30	102%
Research	11.24	22.87	49%
Construction	36.88	28.05	131%
Training	23.38	***	***
TOTAL HEALTH EXPENDITURES	$1,115.91	$1,074.67	104%

* Entries may not add due to rounding.

** Includes services of other health professionals such as chiropractors, podiatrists, visit nurses and other occupations designated as medical services by the Internal Revenue Service.

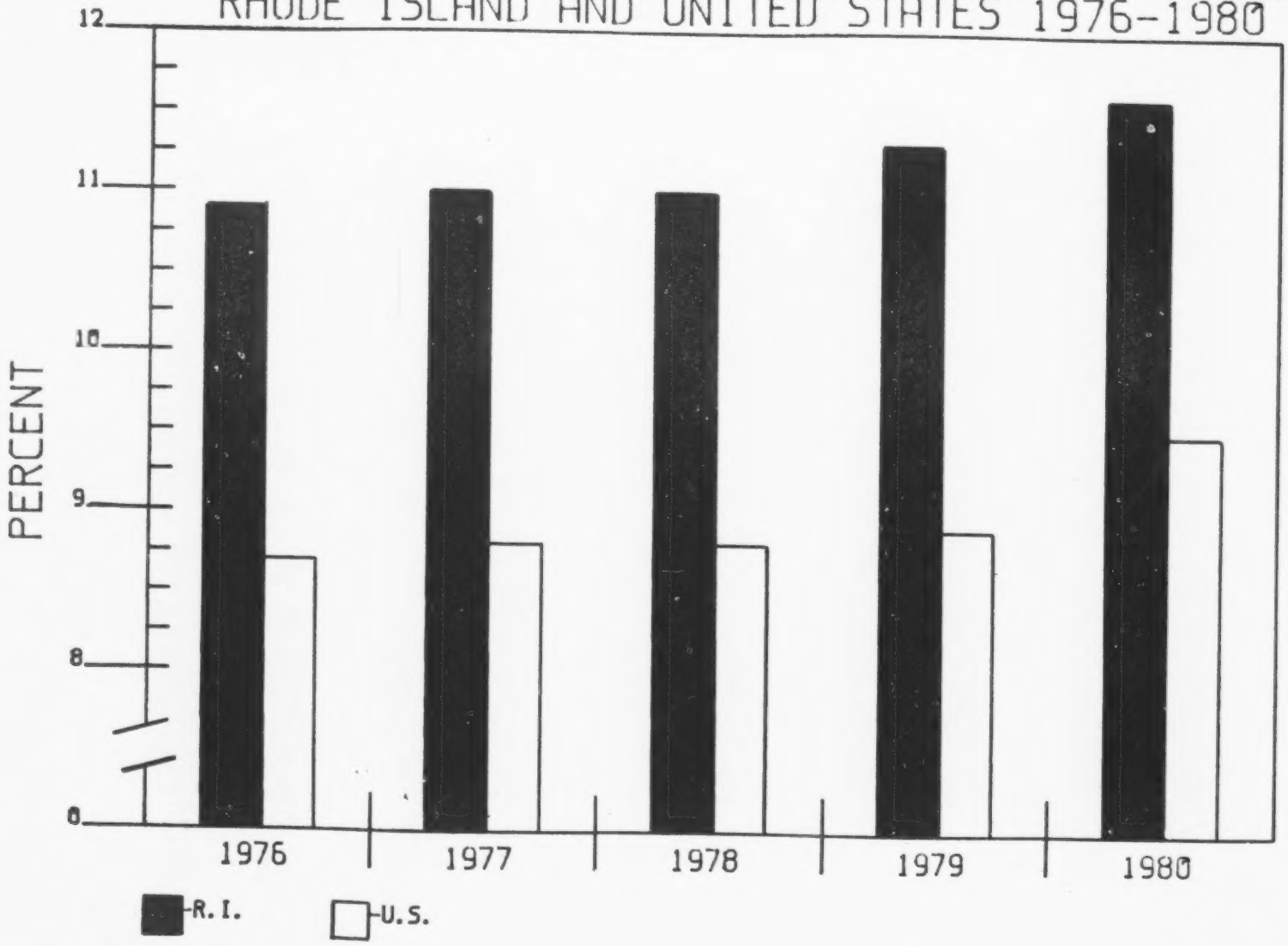
*** Expenditures for the training of health manpower are not included in the national health accounts.

III-5. Health Expenditures as Percent of Gross Product

Not only has considerable growth occurred in dollars spent on health in recent years, but also health has consumed an increasing proportion of total statewide and national economic activity. This can be seen in the chart opposite where total health expenditures are posted as a percentage of gross state and national product. Over the five-year period Rhode Island's health expenditures have increased from 10.9 percent to 11.6 percent of gross state product, a total increase of 0.7 percent. For the nation, whose gross product is vastly larger, the proportion devoted to health increased from 8.7 percent to 9.5 percent for a total increase of 0.8 percent during this same period.

Comparison of these ratios reveals that in Rhode Island the percent of gross product devoted to health care is about 25 percent higher than for the United States. However, it should be noted that most (80%) of this difference is the result of lower per capita gross product in Rhode Island.

HEALTH EXPENDITURES AS PERCENTAGE OF GROSS PRODUCT RHODE ISLAND AND UNITED STATES 1976-1980



Section IV - Health Service Utilization

Geographic Variation in Hospital Utilization Rates in Rhode Island

IV-1. Geographic Variation in Per Capita Hospital Costs

The per capita costs of inpatient hospital care may vary from one area to another for two main reasons. First, the amount of care received in hospitals by residents of one area may differ from that received by residents of another area, as measured on a per capita basis, and second, the costs of care may be different in the institutions providing care to residents of one area as compared to institutions providing care to another area. Both of these effects are present in Rhode Island. The average cost per day for care in the state's community general hospitals varied from $216.31 in the lowest cost hospital to $406.43 in the highest in 1981, with an average of $283.04 per day for all inpatient care provided by those institutions. The corresponding variations in utilization are presented and discussed in the following section.

Inpatient hospital costs for the residents of each city and town in Rhode Island have been estimated by assigning the average cost per day for an institution to each of the days of care provided by that institution to residents of the city or town being considered and summing over institutions. Only the community general hospitals have been included in these estimates; care provided by government hospitals and psychiatric hospitals are excluded. Per capita costs are then obtained by dividing each city or town's estimated costs by the appropriate 1980 census population and adjusting for the unique age-sex distribution of each city or town's population. The results are presented in the table opposite, ordered by the ranking of the city or town's per capita costs in 1981.

In 1981, the average per capita cost for care in these hospitals was $308.38 for the state taken as a whole, with the city/town figures ranging from $186.05 per capita in Little Compton to $382.59 per capita in Providence. Other cities and towns with high per capita hospital costs are from a variety of geographic areas and represent a variety of residential types, ranging from urban to rural; there appears to be no pattern to the group. At the low end of the cost spectrum, however, are the most rural and least densely populated areas of the state.

Over time, cities and towns tend to retain their relative positions in the rank order by hospital cost. The 1980 rankings and percentage deviations are presented to demonstrate how stable these rankings are. The few towns that experienced large changes in their relative positions were, for the most part, towns with small populations and therefore less predictable utilization patterns.

Table IV-1: Geographic Variation in Per Capita Hospital Costs, 1980 and 1981

City/Town	1981 Rank	1981 Percent Deviation*	1980 Rank	1980 Percent Deviation*
Providence**	1	+24	2	+22
Newport**	2	+18	1	+26
Central Falls**	3	+17	7	+ 6
Scituate	4	+15	4	+ 8
Johnston	5	+12	5	+ 7
Warren	6	+11	14	- 1
Woonsocket**	7	+ 4	6	+ 6
East Greenwich	8	+ 3	25	-14
Tiverton***	9	+ 2	3	+19
North Providence**	10	+ 2	8	+ 3
East Providence	11	+ 1	15	- 2
Middletown	12	--	16	- 3
Portsmouth	13	--	13	- 1
Pawtucket**	14	- 1	10	+ 1
Bristol	15	- 4	11	+ 1
Jamestown	16	- 4	24	-13
Foster	17	- 4	18	- 5
Smithfield	18	- 5	19	- 9
Westerly**	19	- 5	17	- 5
West Warwick	20	- 7	20	-10
Cranston**	21	- 7	12	--
North Smithfield**	22	-13	29	-19
North Kingstown	23	-13	23	-13
Burrillville	24	-13	27	-16
Coventry	25	-14	21	-10
Warwick**	26	-15	22	-12
New Shoreham	27	-18	38	-27
Cumberland	28	-19	26	-16
Lincoln	29	-19	28	-18
Barrington	30	-19	32	-22
Narragansett	31	-20	37	-32
Exeter	32	-20	31	-20
Hopkinton	33	-20	30	-20
South Kingstown**	34	-25	34	-23
Richmond	35	-30	35	-30
Glocester	36	-30	36	-30
West Greenwich	37	-37	33	-23
Charlestown	38	-39	38	-41
Little Compton***	39	-40	9	+ 2

*Percentage deviation of city/town per capita costs from statewide per capita costs.

**Cities and towns with one or more community hospitals.

***Estimates for these towns are based on just that portion of their population that receives care in Rhode Island, typically less than 15 percent of their total populations, so that estimates for those two areas are particularly unstable.

IV-2. Geographic Variation in Hospital Day Use Rates

The variation in per capita hospital costs among cities and towns in Rhode Island is largely a result of the variation in the amounts of inpatient hospital care received by the populations of those cities and towns. A common measure of inpatient hospital utilization by a specified population is the day use rate, i.e., the number of inpatient days of care received annually per thousand population, adjusted for the population's age-sex profile. In the table opposite, the cities and towns of Rhode Island are ranked by their day use rates for care in the state's community general hospitals (again excluding government and psychiatric hospitals), and their percentage deviations from the state average are presented.

The day use rate for the state as a whole in 1981 was 1,040 days per thousand population. For the individual cities and towns, the rates varied from 644 days per thousand in Little Compton to 1,394 days per thousand in Woonsocket. In general urban areas tended to be above the state average in their utilization of inpatient hospital facilities, and suburban and rural areas tended to be below average. Of note is the fact that seven of the ten highest ranking communities were cities and towns with one or more hospitals within their boundaries. Whether this is a true cause-and-effect relationship or a happenstance relationship occurring, for example, because hospitals tend to be located in urban areas, cannot be determined from these data.

Also presented in the table opposite are the city/town day use rates for surgical patients only. These are presented because a substantial portion of surgical admissions are for elective procedures, so surgical day use rates may tend to vary in response to local patterns of medical practice more so than non-surgical use rates. The surgical day use rate for the state as a whole in 1981 was 596 days per thousand population, with local variations from a minimum of 365 days per thousand in Little Compton to a maximum of 739 days per thousand in Central Falls. The relationship between a locality's total day use rate and surgical day use rate was not as strong as might be expected. Providence and Newport, for example, ranked first and third in the state, respectively in total day use rates, but only tenth and twelfth in surgical day use rates. North Smithfield and Westerly were also high in total day use rates and relatively low in surgical day use rates. Thus, the geographic variation in total day use rate is not completely explained by the variation in surgical day use rates.

Comparing day use rates with per capita hospital costs by locality yields a more definite correlation. Of the ten top ranking cities and towns in terms of hospital costs, seven also rank in the top ten in utilization. Of the ten lowest ranking cities and towns in costs, nine are also low in utilization. Deviations from this relationship occur because of the differential costs in the hospitals used by different areas. Thus residents of Providence, for example, tend to use relatively high-cost teaching hospitals and medium-cost urban non-teaching hospitals, so their per capita costs are proportionally higher than their utilization rates. Woonsocket residents, however, have much lower per capita costs than would be expected from their high utilization because hospitals in their area have relatively low costs per day of care provided. Thus, variations in hospital costs are only partially determined by variations in hospital utilization rates.

Table IV-2: Geographic Variation in Hospital and Surgical Days Per 1,000 Population, 1981

City/Town	Hospital Days per 1,000 Rank	Hospital Days per 1,000 Percent Deviation*	Surgical Days per 1,000 Rank	Surgical Days per 1,000 Percent Deviation*
Woonsocket**	1	+28	10	+ 6
Central Falls**	2	+28	1	+24
Newport**	3	+19	12	+ 3
Providence**	4	+13	3	+16
Scituate	5	+10	8	+ 7
East Greenwich	6	+ 9	4	+13
Johnston	7	+ 8	6	+ 5
North Smithfield**	8	+ 7	16	- 2
Pawtucket**	9	+ 4	7	+ 7
Westerly**	10	+ 4	22	- 8
West Warwick	11	+ 4	9	+ 7
Middletown	12	--	28	-13
Jamestown	13	--	23	- 9
Portsmouth	14	- 1	20	- 6
Burrillville	15	- 2	13	+ 3
Tiverton	16	- 4	2	+16
Warren	17	- 4	15	+ 1
North Providence**	18	- 5	11	+ 3
Coventry	19	- 6	14	+ 1
North Kingstown	20	- 8	19	- 5
East Providence	21	- 9	18	- 4
Cumberland	22	-10	24	-10
Smithfield	23	-10	17	- 3
New Shoreham	24	-11	5	+10
Cranston**	25	-11	21	- 7
Warwick**	26	-11	26	-11
Foster	27	-11	32	-22
Lincoln	28	-13	27	-12
Hopkinton	29	-14	31	-21
Narragansett	30	-16	33	-23
Bristol	31	-18	30	-15
Exeter	32	-18	25	-10
South Kingstown**	33	-21	34	-24
Richmond	34	-22	29	-13
Barrington	35	-31	35	-25
West Greenwich	36	-32	37	-28
Glocester	37	-33	36	-25
Charlestown	38	-33	38	-37
Little Compton	39	-41	39	-39

*Percentage deviation of city/town day use rates from statewide day use rate.

**Cities and towns with one or more community hospitals.

IV-3. Geographic Variation in Surgical Procedure Rates

There is considerable variation in the frequency with which specific surgical procedures are performed in different areas. This variation is due in part to different patterns of illness among different populations and in part to differing patterns of medical practice among the providers serving those regions. Especially in cases where there are non-surgical alternatives, the rates for surgical procedures may vary greatly from area to area because of the latter cause.

The maximum and minimum rates for performance of seven surgical procedures on the populations of Rhode Island cities and towns in 1981 appear in the table opposite. They are presented as percentage deviations from the state averages, which vary from a low of 0.89 appendectomies per thousand population to a high of 3.03 abdominal hysterectomies per thousand female population. The seven procedures considered are the following:

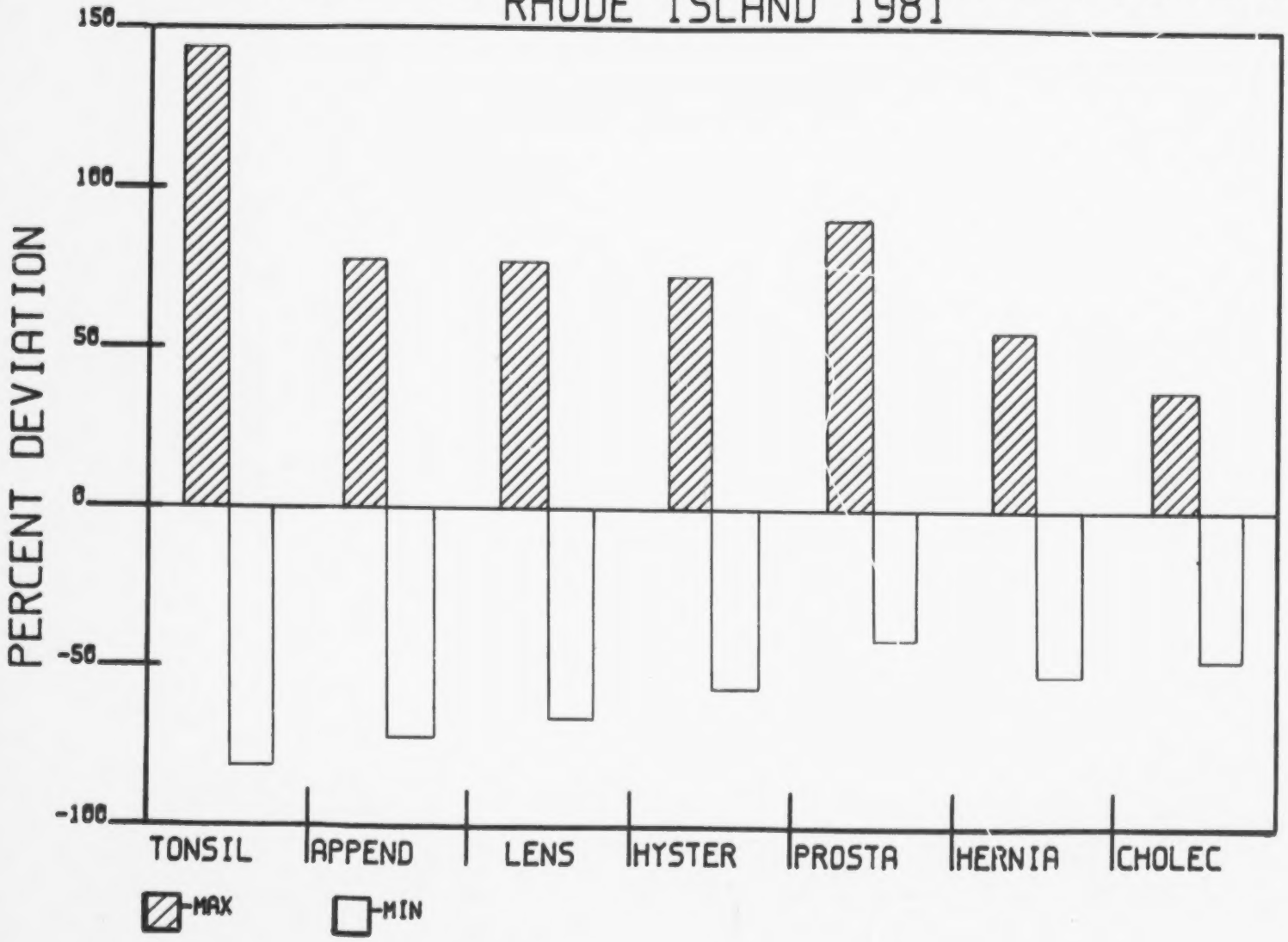
1. Tonsillectomy
2. Cholecystectomy
3. Intracapsular Extraction of Lens
4. Unilateral Repair of Inguinal Hernia
5. Appendectomy
6. Prostatectomy
7. Abdominal Hysterectomy

These procedures are among those most often performed in Rhode Island, so the observed differences in rates by locality should not be due solely to chance variation.

The largest observed variation is for tonsillectomies, where there is a tenfold difference between the lowest rate (0.30 per thousand in Bristol) and the highest (3.29 per thousand in Pawtucket). It is probable that some portion of this variation is due to the performance of tonsillectomies in outpatient settings in some areas, in which case they would not be included in these rates. Some areas for which outpatient surgery is the norm are Barrington, Bristol, and Warren, for example, all of which have lower than average tonsillectomy rates in inpatient settings. Nevertheless, other patterns can be identified, such as the high rates over most of the northern part of the state, including Pawtucket, Central Falls, Lincoln, Cumberland, Woonsocket, Smithfield, and Burrillville.

The procedure with the next largest amount of variation is appendectomies, for which there was a nearly six-fold difference between the lowest rate (0.27 per thousand in Portsmouth) and the highest (1.57 per thousand in East Greenwich). Since appendectomies are considered emergency procedures when performed as the principal procedure during a hospital stay, it is tempting to dismiss this variation as due to chance. However, some of the patterns of variation are consistent across procedures and over more than one year. For example, East Greenwich had a nearly identical rate for appendectomies in the previous year, 1980, and had the highest rates for two of the six other procedures in 1981, namely, the usually elective procedures of abdominal hysterectomy and intracapsular extraction of lens. Such consistency across procedures may be indicative of a particular pattern of medical practice if it were to continue over a period of time.

DEVIATION OF LOCAL SURGICAL RATES FROM STATE NORMS
RHODE ISLAND 1981



Section V - Preventive Health

Cigarette Smoking in Rhode Island

V-1. Cigarette Smoking in Rhode Island

Smoking behavior continues to cause grave concern among public health officials as well as the general community. Evidence continues to accumulate definitively linking cigarette smoking with the major life-threatening diseases of our time, most notably cardiovascular diseases and cancer, -particularly lung cancer.

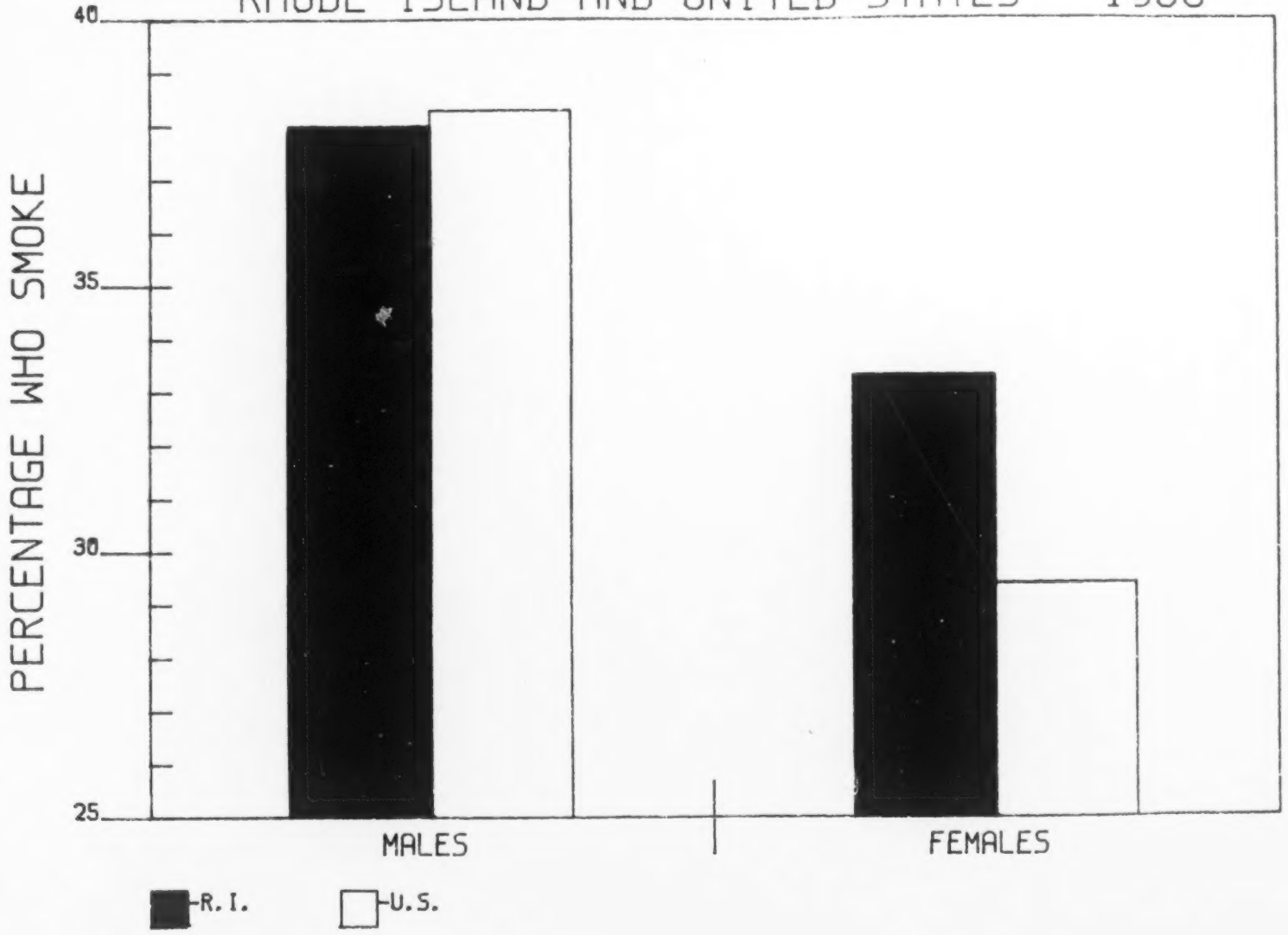
Even though two decades have passed since the Surgeon General's landmark report warning against the health dangers of smoking, more than one in three adult Rhode Islanders currently smoke cigarettes. Due concern is warranted as Rhode Island's incidence of lung cancer, among other indicators, is significantly higher than that found in a representative sample of the United States. For males, it is 9 percent higher; for females it is 14 percent higher. This last finding is most significant as it, along with other evidence below and on the pages to follow, supports increased focus on trends in women's smoking behavior and its deleterious effects on their health.

Men and women differ considerably in their smoking behavior. In general men are more likely to smoke cigarettes than women. This is true both for Rhode Island and the nation, as indicated by survey-based data presented on the chart opposite. The proportion of men in Rhode Island who smoke cigarettes approximately equals the proportion found nationally (R.I.:38.0/U.S.:38.3); the same cannot be said for women. The proportion of women in Rhode Island who smoke cigarettes exceeds the proportion found nationally by close to 4 percent. (R.I.:33.3/U.S.:29.4) This differential is even more pronounced when specific age groups are considered as detailed below. Among females aged 35 to 44 years the smoking rate in Rhode Island exceeds that observed nationally by 8.1 percent. Differences of greater than 5 percent are apparent in all other age groups with the exception of the elderly. Only in the category 65 years and older, where the proportion who smoke is at its lowest both for Rhode Island and the nation, is Rhode Island's smoking rate among females lower than the national rate.

Table V-1. Smoking Rates Among Females Age 20 and Older by Age, Rhode Island and United States, 1980

Age (in years)	Percentage Who Smoke	
	Rhode Island	United States
20-24	37.9	32.7
25-34	38.2	31.6
35-44	43.0	34.9
45-64	35.9	30.8
65+	13.6	16.8
All Females	33.3	29.4

SMOKING RATES BY SEX AMONG THOSE AGE 20 AND OVER RHODE ISLAND AND UNITED STATES - 1980



V-2. Cigarette Smoking: Male and Female

Smoking rates vary considerably by age and sex over time. Rates based on 1980 survey data charted opposite show a consistent increase though the early part of the life cycle, peaking in the 35-44 year age group for both sexes.

Historically more men have smoked cigarettes than women. This remains the case, yet the data presented clearly challenges whether this pattern will continue. Female smoking rates relative to men increase consistently from the peak age group, 35-44 years, on down. In the two youngest age groups proportionally more females smoke than males. This is particularly menacing for two reasons: (1) early onset of smoking provides increased exposure to smoking's ill effects through the remaining course of the life cycle, and (2) the smoking behavior of women in these two specific age groups coincides with their most active reproductive years, the combination of which yields risks yet to be fully defined for both mother and child.

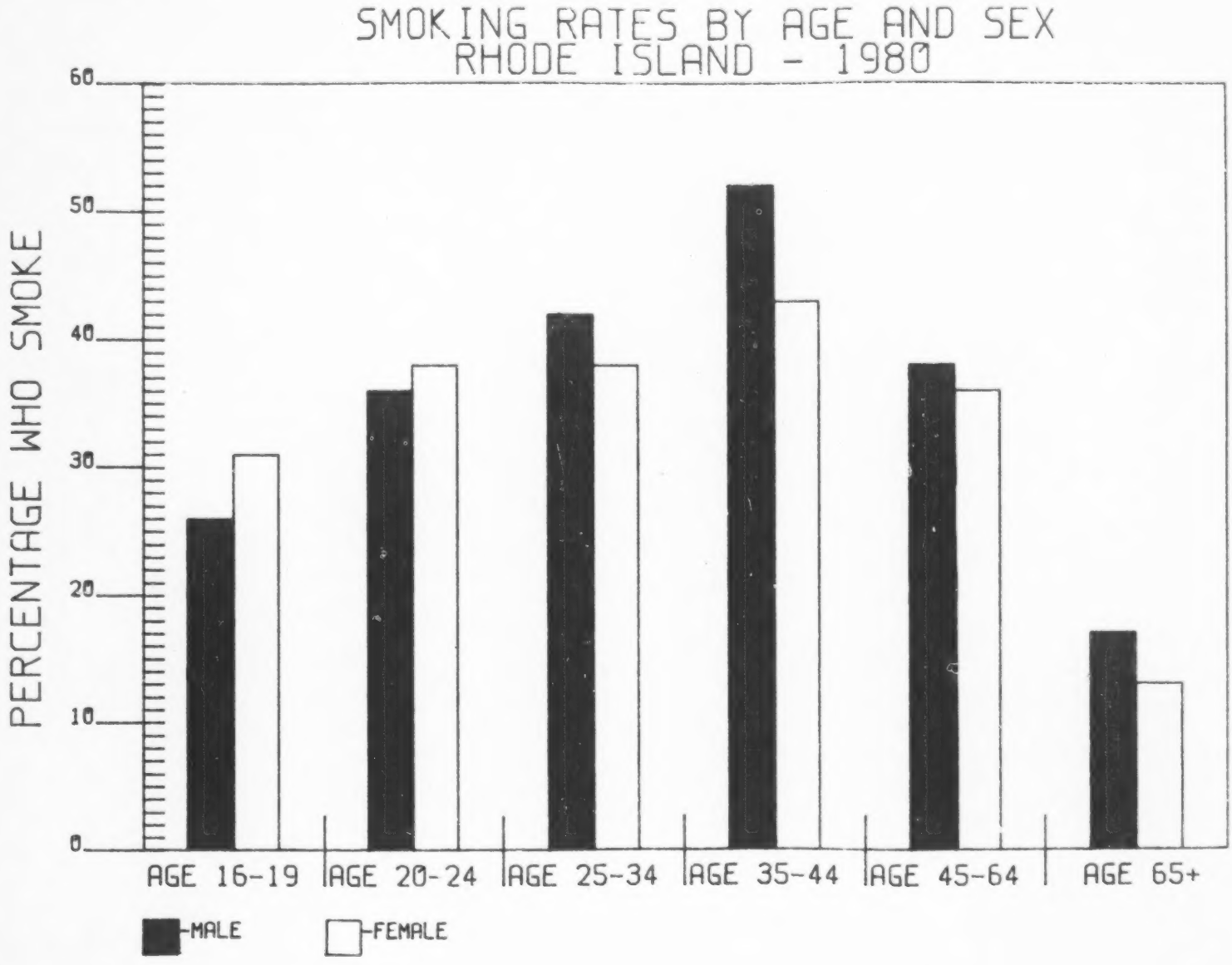
Whether or not smoking rates continue to increase among women relative to men remains to be seen. Irrespective of these findings, warnings against smoking have not gone totally unheeded.

Proportionally fewer Rhode Islanders reported currently smoking cigarettes in 1980 compared to 1975. As the table below indicates, a drop of five percent was recorded in the overall statewide smoking rate. Just as outstanding, this overall rate was accompanied by consistent decreases in all age and sex categories. Further attention may be warranted once again by females, however, as females exhibited smaller decreases than males both overall and within most age groups.

Table V-2: Five-Year Change in Percentage of Population Age 16 Years and Older Currently Smoking by Sex, Rhode Island, 1975-1980

Change in Percentage Points, 1975-1980

Age (in years)	Male	Female	Average of Total Population
16-19	-8	-2	-5
20-44	-4	-4	-5
45-64	-9	-2	-5
65+	-7	-3	-4
Total 16+	-5	-3	-5


SMOKING RATES BY AGE AND SEX
RHODE ISLAND - 1980
PERCENTAGE WHO SMOKE
60
50
40
30
20
10
0
AGE 16-19
AGE 20-24
AGE 25-34
AGE 35-44
AGE 45-64
AGE 65+
MALE
FEMALE

V-3. Rhode Island's Smokers: The Amount Smoked

Patterns in the amount smoked are clearly associated with age and sex as presented in the chart opposite. Men are not only generally more likely to smoke, they are also more likely to smoke heavily. Overall more than a third (37.5%) of male smokers age sixteen and older in Rhode Island consume more than one pack of cigarettes daily, while just over a quarter (26.3%) of female smokers smoke as heavily.

Men consistently smoke substantially more than women in most age groups, the exception being the 16-19 year age group where there are few heavy smokers of either sex. The highest proportion of males smoking heavily is 52 percent among those 45 to 64 years old. The highest proportion for females smoking in excess of one pack daily is 48 percent in the preceding age group, 35 to 44 years. These findings are consistent with the previously cited patterns of increased smoking among younger females relative to males in Rhode Island.

The significance of the volume of cigarettes smoked each day lies in its direct relationship to the risk of cigarettes' long term detrimental effects. All else held equal, heavy smokers are more likely to develop lung cancer or any other of the many conditions associated with smoking. There is no evidence that the overall proportion of smokers in Rhode Island who smoke heavily is substantially increasing.

It is interesting to note that similar patterns were found in a national survey performed in 1980. (In that survey, the volume of smoking was measured by cigarettes per day, and heavy smokers were defined as those smoking more than 25 cigarettes, or 1 1/4 packs, per day. Thus the figures cited are not comparable to Rhode Island figures on an absolute basis.) Nationally, for the population age twenty years and older:

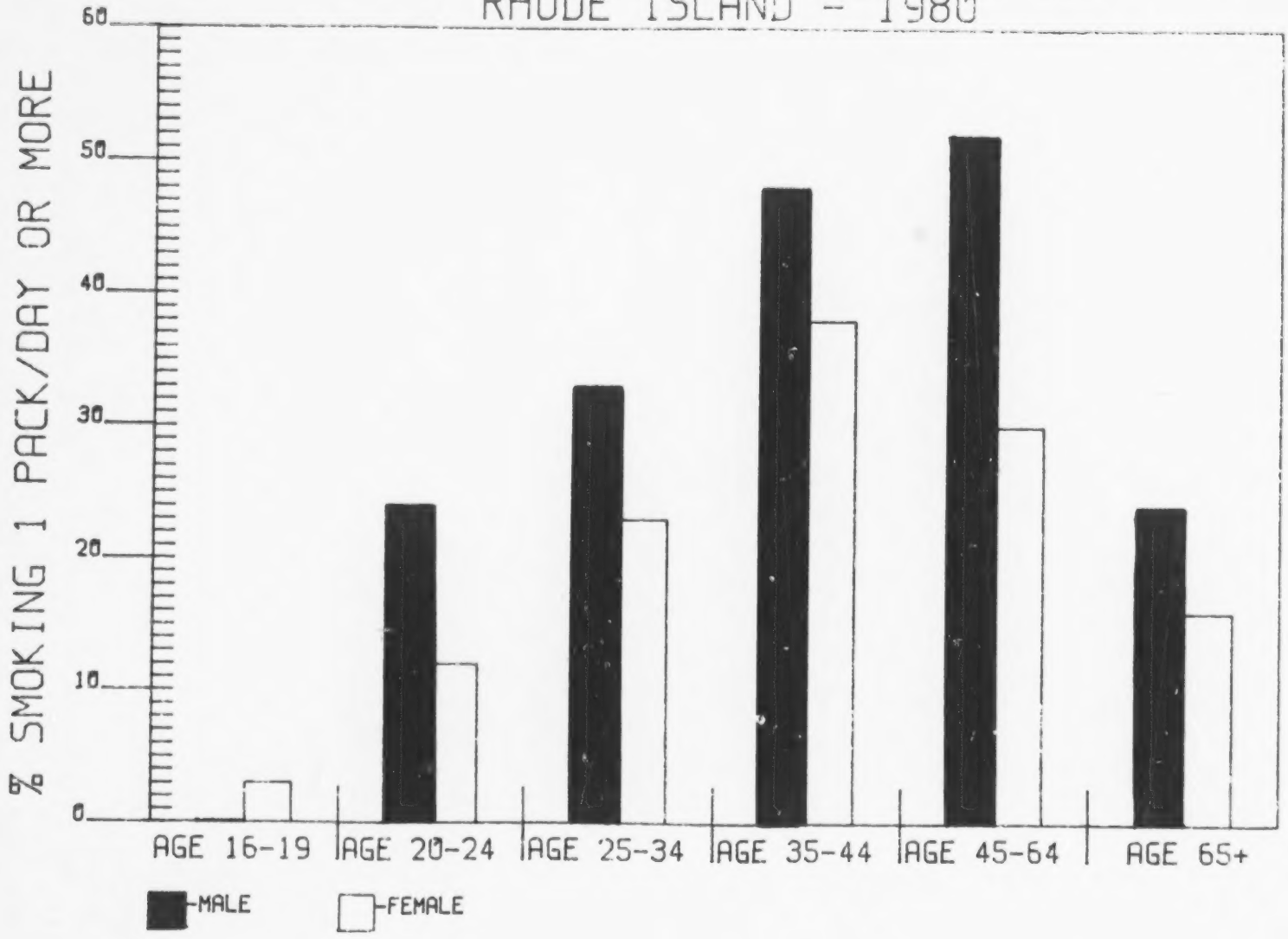
(1) Men consistently smoked more heavily than women. (Male: 34.3%/Female 23.8%)

(2) The proportion of men smoking heavily exceeded that of women in all age groups.

(3) The highest proportion of heavy male smokers was in the 45 to 64 year age group at 42.6%.

(4) The highest proportion of heavy female smokers was in the preceding age group 35 to 44 years, at 32.7%.

AMOUNT SMOKED BY AGE AND SEX
RHODE ISLAND - 1980



V-4. The Relationship Between Smoking and Family Economic Status

The data on the preceding pages, largely devoted to examining smoking behavior by age and sex, is greatly enhanced by this reexamination of the same survey results by family economic status, or FES.

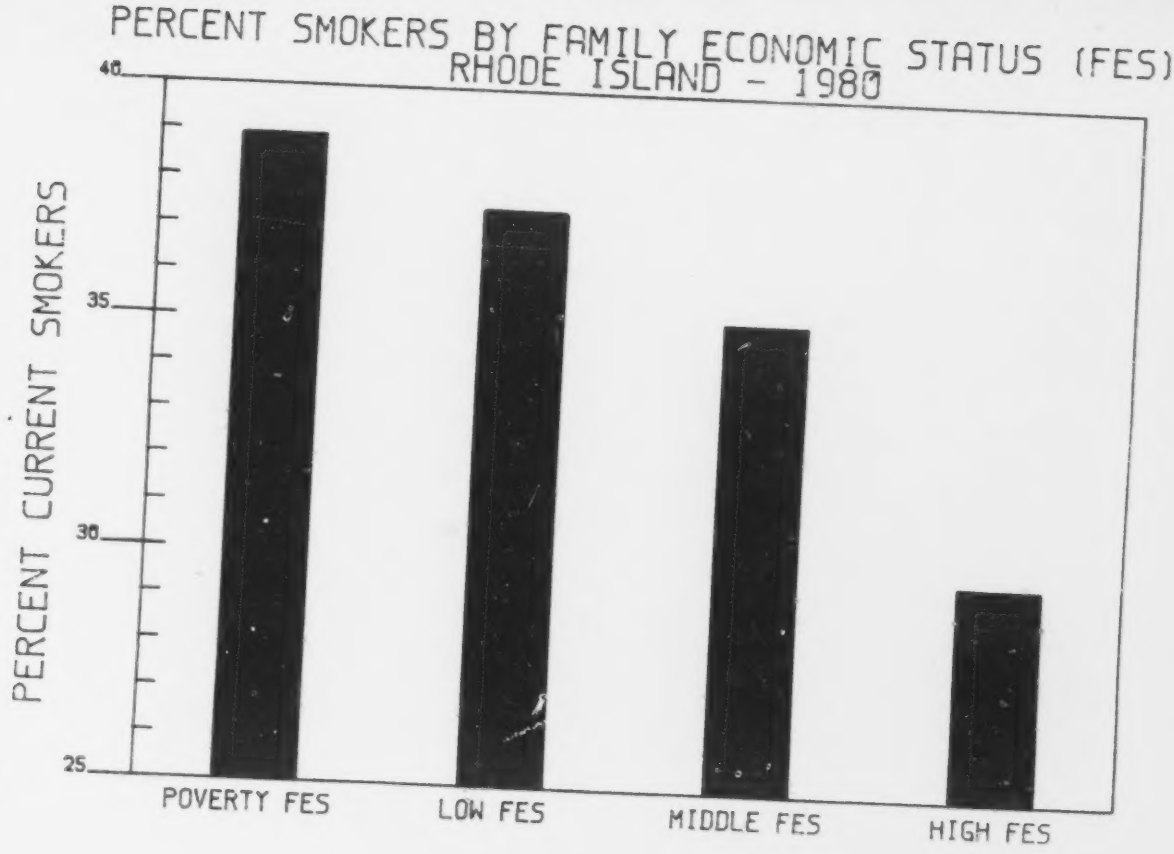
The upper figure appearing on the opposite page readily depicts the inverse relationship between FES and the proportion of Rhode Islanders who currently smoke. Just as interesting is the direct positive relationship between FES and the likelihood of quitting. The two tables below provide (1) more specific distributions of the population by smoking status within each FES and (2) an indication of how these distributions have changed over the past five years. Overall, these changes have occurred in a positive direction. There are fewer current smokers, more former smokers, and more people who have never smoked. Generally, the higher the FES, the more positive the findings in each smoking category.

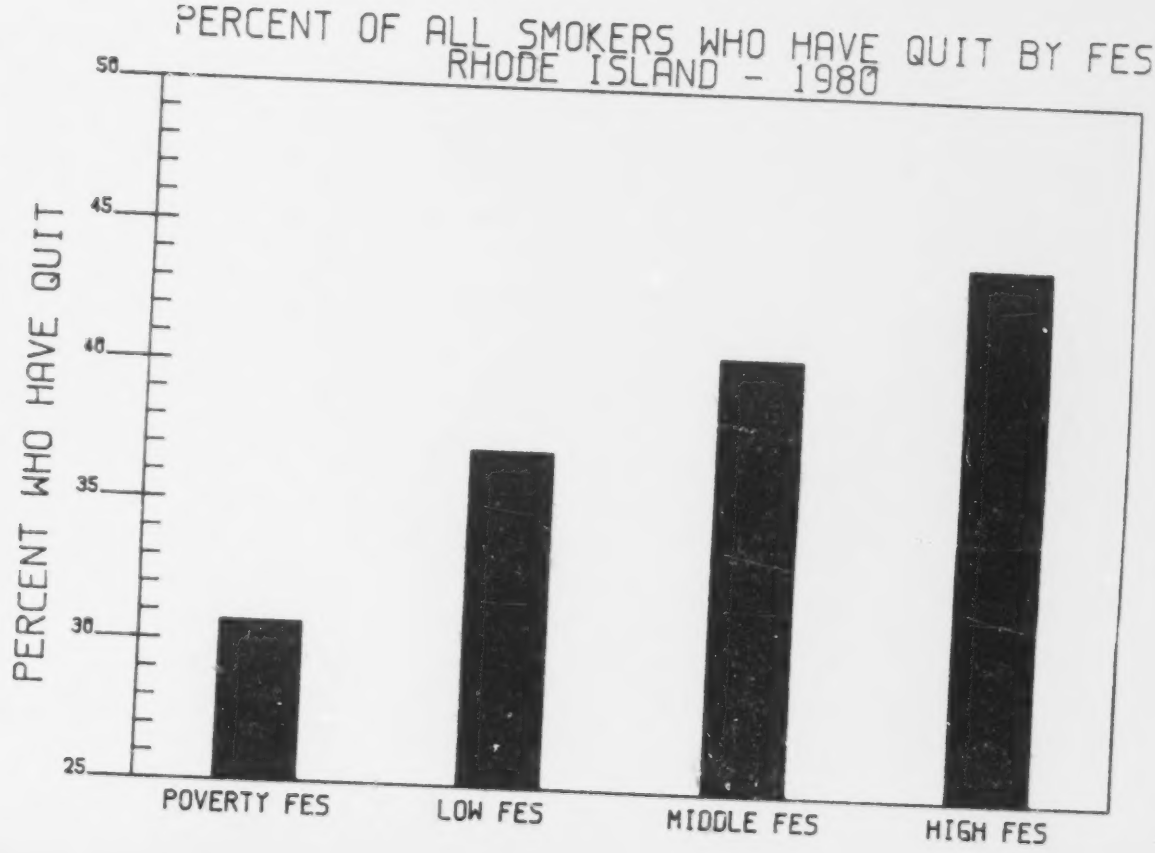
Table V-3: Smoking Status and Quit Rates by Family Economic Status, Rhode Island, 1980

	Smoking Status			Quit Rate
Family Economic Status	% Current Smoker	% Former Smoker	% Never Smoked	(#Quit/#Quit + #Currently Smoke)
Poverty	38.9	17.3	43.8	30.7
Low	37.4	21.9	40.7	37.0
Middle	35.1	24.0	40.9	40.6
High	29.6	23.3	47.1	44.1
All FES	34.2	22.7	43.1	39.9

Table V-4: Five Year Percent Change in Smoking Status by Family Economic Status, Rhode Island, 1975-1980

	Smoking Status: Changes in Percentage Distribution		
	% Current Smokers	% Former Smokers	% Never Smoked
Desirable Direction:	-	+	+
Findings by FES:			
Poverty	-1	-4	+3
Low	-4	+5	-1
Middle	-6	+5	+2
High	-7	+1	+6
All FES	-5	+3	+2


PERCENT SMOKERS BY FAMILY ECONOMIC STATUS (FES)
RHODE ISLAND - 1980
PERCENT CURRENT SMOKERS
40
35
30
25
POVERTY FES
LOW FES
MIDDLE FES
HIGH FES


PERCENT OF ALL SMOKERS WHO HAVE QUIT BY FES
RHODE ISLAND - 1980
PERCENT WHO HAVE QUIT
50
45
40
35
30
25
POVERTY FES
LOW FES
MIDDLE FES
HIGH FES

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